The Economist

- Goodbye to the racial jobs gap
- San Francisco's comeback
- China's chipmaking plan
- The looming hell in Rafah

FEBRUARY 17TH–23RD 2024

THE RIGHT GOES GAGA

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Candidates tied to Tehreek-e-Insaf (PTI), the party of Imran Khan, won the most seats in **Pakistan's** general election, despite a de facto ban on their campaign. Mr Khan is in prison on multiple charges, which he says are politically motivated. The Pakistan Muslim League-Nawaz (PML-N), which was widely expected to win, came second. PML-N is the party of Nawaz Sharif, Mr Khan's arch-rival. It will form a coalition government with the Pakistan Peoples Party, which came third. Mr Khan's supporters said the election had been rigged, which the PML-N denied. The head of the army claimed the poll had been "free and unhindered".

Prabowo Subianto, **Indonesia's** defence minister, declared victory in the country's presidential election. Mr Prabowo is mired in controversy. He lost the past two elections to Joko Widodo (or Jokowi), claiming that the vote was stolen from him. And he has been accused of committing atrocities, which he denies, when he was in the army, notably in East Timor, where the independence movement had been brutally suppressed.

In **India** police fired tear-gas at thousands of farmers trying to reach Delhi to stage a mass protest. Similar demonstrations were held in 2020 and 2021. Farmers are an important voting bloc in India's general election, due to be held probably in April and May.

After months of negotiations with the Indian government, Qatar released eight **Indian former naval officers** who had been sentenced to death for reportedly spying for Israel.

Thaksin Shinawatra, a former prime minister, was granted parole in **Thailand**, six months into serving a sentence for graft. Mr Thaksin was ousted in a coup in 2006 and returned from exile last August. He was originally sentenced to eight years, which was reduced to one year by the king, and served his six months in a hospital.

A commander-in-chief?

The chairman of America's joint chiefs of staff, General Charles Brown, warned that America's credibility was at stake, following Donald Trump's comment that he would not protect **NATO** countries in Europe from a Russian attack if the countries missed NATO targets on defence spending. Mr Trump said he would in fact encourage Russia to attack (he was recalling a conversation with a European leader). General Brown reaffirmed America's commitment to the military alliance.

Lloyd Austin, America's defence secretary, was hospitalised again for complications related to surgery for prostate cancer, causing him to pull out of a trip to Brussels for a meeting with NATO allies.

Mr Trump meanwhile asked the **Supreme Court** for a quick ruling on whether to pause the recent decision by an appeals-court panel that he is not immune from prosecution.

Joe Biden made a crack about his age. "I've been around a while," he said, "I do remember that." Earlier, the special counsel investigating the president's misuse of classified documents concluded that no charges would be made, because of Mr Biden's age and mental fitness. He is a "sympathetic, well-meaning, elderly man with a poor memory", said the report. Democrats rallied to Mr Biden's defence.

Mike Johnson, the speaker of America's House of Representatives, suggested that the Senate's package of **military aid for Ukraine and Israel** (and humanitarian aid for Gaza) would go nowhere in his chamber. Twenty-two Republican senators joined Democrats in voting for the bill, but Mr Johnson wants measures on beefing up border security included in a previous version of the legislation to be restored.

The House voted to **impeach** Alejandro Mayorkas, the secretary of homeland security. An earlier vote had decided not to impeach, but the return of one Republican from cancer treatment to vote yes helped to put the yeas over the line. There is little chance of Mr Mayorkas being found guilty of a "systematic refusal" to enforce border policy when he is tried in the Senate.

Clinging on

The Democrats won the special election for the **congressional seat** vacated by George Santos, a disgraced Republican, which reduces the Republicans' already razor-thin majority in the House.

Palestinian sources said that 74 people, including civilians, were killed in an **Israeli** bombardment of Rafah, the southernmost city in **Gaza**, as part of a raid to rescue two hostages held by Hamas. America, Britain and France are among the countries that have urged Israel not to mount a full-scale invasion of Rafah because of the number of civilians who would probably be killed. Meanwhile talks in Cairo over a temporary ceasefire and the release of hostages in exchange for Palestinian prisoners appear to have become deadlocked.

Zimbabwe plans to introduce a gold-backed currency to replace the slumping Zimbabwean dollar, which fell by 90% last year and a further 50% so far this year against the US dollar. This would be the second time in little more than a decade that Zimbabwe has scrapped its currency after mismanaging it.

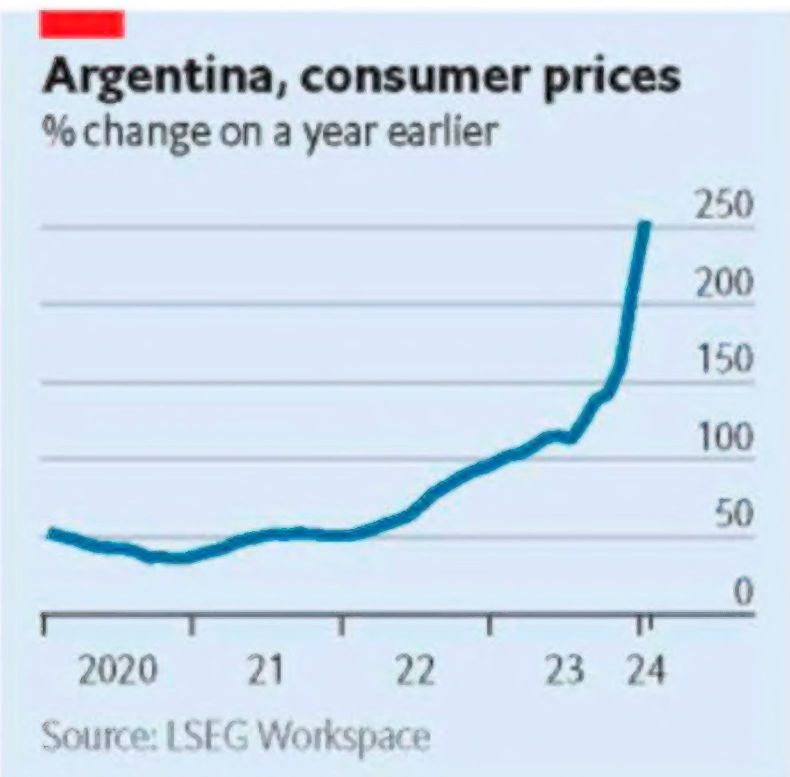
The UN Security Council expressed concern about escalating violence in eastern **Congo** as the Rwandan-backed M23 rebel group advanced on Goma, the capital of North Kivu province. South Africa is to send 2,900 troops to fight armed groups as part of a force deployed by SADC, the regional bloc.

Azerbaijan attacked an army post in **Armenia** close to their border, the first fatal skirmish between the two countries since Azeri troops recaptured the region of Nagorno-Karabakh last September. Azerbaijan said the attack was in retaliation for an earlier infraction. Armenia said four of its soldiers were killed.

Volodymyr Zelensky made more changes to the top brass of **Ukraine's** armed forces following his dismissal of General Valery Zaluzhny, the country's most senior commanding officer. General Zaluzhny is given much of the credit for stopping Russia's invasion in February 2022, but has warned that the war has settled into a stalemate. His replacement is Colonel-General Oleksandr Syrsky, who led the reconquest of Kharkiv from Russian forces towards the end of 2022. Meanwhile, Ukraine sank a Russian naval vessel off the coast of Crimea.

Russia has put **Estonia's** prime minister, Kaja Kallas, on a "wanted" list for taking "hostile actions against historical memory and our country", according to a Kremlin spokesman. Ms Kallas responded on social media that this is "more proof that I am doing the right thing" in supporting Ukraine.

America's annual **inflation** rate slowed to 3.1% in January. Although that was down from the 3.4% recorded in December, the dip was smaller than had been expected. Stockmarkets shuddered, as investors reduced their bets for an early interest-rate cut by the Federal Reserve. The Dow Jones Industrial Average had its worst day in almost a year. The next day traders in Britain seemed to be more optimistic about a cut to interest rates there when inflation came in at 4% for January, below forecasts.



Argentina's inflation rate surged to 254% in January from 211% in December, when it overtook Venezuela as the country with the highest price rises in Latin America. Javier Milei, Argentina's new president, put a rocket under inflation when he devalued the peso and abolished price controls, part of his "shock therapy" package of economic reforms. He has warned of more pain ahead in his effort to stabilise the economy.

The economies of **Japan** and **Britain** fell into recession at the end of 2023. Japan's GDP unexpectedly shrank by 0.1% in the fourth quarter compared with the third. In July to September it contracted by 0.8%. It has now slipped from being the world's third- to fourth-largest economy. British GDP was 0.3% smaller in the fourth quarter, after shrinking by 0.1% in the third.

PepsiCo acknowledged that consumers are pushing back against price rises. The food and beverages giant jacked up the price of its products in 2022 and 2023, but it recorded a decline in the volume of snacks and soft drinks it sold last year. Ramon Laguarta, the chief executive, said that was in part due to pricing. Carrefour, a big supermarket chain in France, has stopped stocking Pepsi's goods because of its "unacceptable price increases".

Come fly with me

Cost of living concerns are not stopping people from travelling. **TUI**, Europe's biggest tour operator, reported a big surge in quarterly revenue, and confirmed it expects sales to rise by 10% this year. Separately, TUI's shareholders voted to retain a sole listing in Frankfurt and delist from the London Stock Exchange, another blow to the City's reputation.

The wave of consolidation in America's Permian Basin shale oilfield continued, when **Diamondback Energy** struck a $26bn deal to buy **Endeavor Energy Partners**. The combined company will be the third-largest operator in the Permian, behind ExxonMobil and Chevron.

Arjuna Capital and Follow This, two activist-shareholder groups, asked a court to throw out **Exxon's lawsuit** against them for the proxy motion they had proposed that called on the company to slash emissions. Arjuna and Follow This withdrew their motion when Exxon lodged the suit, but Exxon is still pursuing it, because it wants "clarity on a process that has become ripe for abuse". The two investors argue that Exxon's legal action is unnecessary, and that Exxon instead wants to establish "the novel position" that it can haul its shareholders into court for submitting proxy proposals.

Nvidia, which has benefited more than most chipmakers in the market for high-end AI chips, hit a market capitalisation of $1.8trn, pushing it past Amazon's stockmarket value. Meanwhile Jeff Bezos, **Amazon's** founder and executive chairman, sold $4bn-worth of stock in the company recently, according to reports. He is still Amazon's biggest shareholder, holding about 9% of the stock.

A lawsuit was filed in a federal court seeking class-action status to sue Amazon for misleading users when it introduced ads to its **Prime video-streaming** service. The suit alleges breach of contract by making subscribers pay an extra $2.99 a month for the ad-free service they had signed up to. The case may sound trivial, but for Amazon it is another unwelcome focus on its terms for Prime. The Federal Trade Commission brought a suit against it last year for allegedly duping consumers into signing up to the service.

The Body Shop put its business in Britain into administration, just five weeks after its new private-equity owner took over operations. The cosmetics and beauty retailer pioneered ethical shopping when it was founded by Anita Roddick in 1976, becoming a ubiquitous presence on British high streets. It runs around 200 shops in Britain now (and many more internationally).

All for nought

Lyft's share price got an unexpected lift when the ride-hailing company made a clerical error in its earnings. The error stated that its adjusted profit margin was expected to rise by 500 basis points (or 5 percentage points) in 2024, rather than 50 basis points (0.5 points). Before the mistake was realised the stock soared by 60%, which was blamed on trading bots for not recognising an obvious typo. Still, Lyft delivered strong results otherwise. Its stock ended the day at its highest point in a year.

The Economist

The peril of national conservatism

It's dangerous and it's spreading. Liberals need to find a way to stop it

IN THE 1980s Ronald Reagan and Margaret Thatcher built a new conservatism around markets and freedom. Today Donald Trump, Viktor Orban and a motley crew of Western politicians have demolished that orthodoxy, constructing in its place a statist, "anti-woke" conservatism that puts national sovereignty before the individual. These national conservatives are increasingly part of a global movement with its own networks of thinkers and leaders bound by a common ideology. They sense that they own conservatism now—and they may be right.

Despite its name, national conservatism could not be more different from the ideas of Reagan and Thatcher. Rather than being sceptical of big government, national conservatives think ordinary people are beset by impersonal global forces and that the state is their saviour. Unlike Reagan and Thatcher, they hate pooling sovereignty in multilateral organisations, they suspect free markets of being rigged by the elites and they are hostile to migration. They despise pluralism, especially the multicultural sort. National conservatives are obsessed with dismantling institutions they think are tainted by wokeness and globalism.

Instead of a sunny belief in progress, national conservatives are seized by declinism. William Buckley, a thinker of the old school, once quipped that "A conservative is someone who stands athwart history, yelling stop." By comparison, national conservatives are revolutionaries. They do not see the West as the shining city on the hill, but as Rome before the fall—decadent, depraved and about to collapse amid a barbarian invasion. Not content with resisting progress, they also want to destroy classical liberalism.

Some people expect all this to blow over. National conservatives are too incoherent to pose a threat, they say. Giorgia Meloni, Italy's prime minister, supports Ukraine; Mr Orban has a soft spot for Russia. The Polish Law and Justice party (PiS) is anti-gay; in France Marine Le Pen is permissive. Besides, the obsession with national sovereignty would make people worse off, as trade collapses, economic growth stalls and civil rights are curtailed. Voters would surely choose to restore the world liberalism made.

That view is unforgivably complacent. National conservatism is the politics of grievance: if policies lead to bad outcomes, its leaders will shift the blame onto globalists and immigrants and claim this only proves how much is wrong with the world. For all their contradictions, national conservatives have been able to unite around their hostility towards common enemies, including migrants (especially Muslims), globalists and all their supposed abettors. Nine months before America's election, Mr Trump is already undermining NATO (see Leader).

National conservatives also deserve to be taken seriously because of their electoral prospects. Mr Trump is leading the polls in America. The far right is expected to do well in European parliamentary elections in June. In Germany in December the hard-right Alternative for Germany hit a record high of 23% in polls. Anticipating a lost election for Rishi Sunak, stridently pro-Brexit and anti-migration Tories are plotting to take over the party. In 2027 Ms Le Pen could well become France's president.

And nationalist conservatives matter because when they succeed in winning office everything changes (see Briefing). By setting out to capture state institutions, including courts, universities and the independent press, they cement their grip on power. That is what Mr Orban's Fidesz party has done in Hungary. In America Mr Trump has been explicit about his autocratic designs. The people working for him have drawn up policy documents that set out a programme to capture the federal bureaucracy. Once institutions have been weakened, it can be hard to restore them. In Poland PiS had the same agenda, before it was ousted in elections last year. The centre-right coalition that defeated it is now struggling to assert control.

How, then, should old-style conservatives and classical liberals deal with national conservatism? One answer is to take people's legitimate grievances seriously. The citizens of many Western countries see illegal migration as a source of disorder and a drain on the public purse. They worry that their children will grow up to be poorer than they are. They are anxious about losing their jobs to new technology. They believe that institutions such as universities and the press have been captured by hostile, illiberal, left-leaning elites. They see the globalists who have thrived in recent decades as members of a self-serving, arrogant caste who like to believe that they rose to the top in a meritocracy when, in reality, their success was inherited.

These complaints have their merits, and sneering at them only confirms how out of touch elites have become. Instead, liberals and old-style conservatives need policies to deal with them. Legal migration is easier if the illegal sort is curbed. Restrictive planning rules price young people out of the housing market. Closed shops need busting apart. To have the truly open society they claim to want, liberals must press for elite intellectual institutions—the top businesses, newspapers and universities—to embody principles of liberalism instead of succumbing to censorship and groupthink. For all that the illiberal left and the illiberal right are mortal enemies, their high-octane rows over wokeness are mutually sustaining.

To diminish the national conservative fear that people's way of life is under threat, liberals also need to stake their claim to some of their opponents' ideas. Instead of virtue signalling, they should acknowledge that the left can be illiberal, too. If liberals are too squeamish to defend principles such as free speech and individual rights against the excesses of the left, they will fatally undermine their ability to defend them against the right. Instead of ceding the power of national myths and symbols to political opportunists, liberals need to get over their embarrassment about patriotism, the natural love of one's country.

Liberalism's great strength is that it is adaptable. The abolitionist and feminist movements broke apart the idea that some people counted more than others. Socialist arguments about fairness and human dignity helped create the welfare state. Libertarian arguments about liberty and efficiency led to freer markets and a limit on state power. Liberalism can adapt to national conservatism, too. Right now, it is falling behind. ■

America and the future of NATO

Brace for the Don

Europe must hurry to defend itself against Russia—and Donald Trump

IF DONALD TRUMP returns to the White House, which version will it be? Tough-love Trump who cajoled allies to spend more on defence, reinforced NATO troops on the eastern flank and began to arm Ukraine; or vindictive Trump who will act on his threats to sabotage NATO? Expect sabotage.

On February 10th the near-certain Republican presidential nominee recounted how the leader of a "big country" once asked him whether he would defend an ally against the Russians, even if it was "delinquent", by failing to spend 2% of GDP on defence. "No, I would not protect you," Mr Trump recalled saying. "In fact, I would encourage them to do whatever the hell they want."

Even if this was hyperbole, as his defenders claim, exhorting Russia to attack any ally is an assault on the sacred promise of NATO's Article 5: that an attack on one is an attack on all; and that an attack on even the smallest ally is, in effect, an attack on America. Mr Trump's outburst is all the more dangerous now that Russia, while rearming at a furious pace, is pushing hard against ammunition-starved Ukrainian forces. A growing number of European governments believe they will face the real threat of a Russian attack in the coming years.

NATO has kept its members safe since its founding in 1949, and sustained the spread of democracy in Europe. It keeps attracting members, most recently Finland and, soon, Sweden. But without Article 5 the alliance is worth little. Merely casting doubt erodes deterrence and thereby raises the risk of war.

Mr Trump is scarcely the first president to complain of free-riding allies—and rightly so. But he is turning a democratic alliance into a mobster's racket: no money, no protection. Mr Trump claims his bluntness succeeded in getting allies to spend billions more on their defence. The bigger impulse has been the looming threat from Russia. Defence spending started to rise before Mr Trump's time, and has continued after it. The number of allies making the 2% target rose from just three in 2014 to 11 last year; 18 of the 31 allies are due to reach it this year.

Mr Trump's baleful influence is affecting Congress. A bill to renew military and civilian aid to Ukraine (and to help Israel and other allies) has belatedly cleared the Senate but may be killed by Republicans in the House. Legislation requiring the Senate to approve an actual American withdrawal from NATO would not be much of a restraint. Congress cannot stop a president from, say, withdrawing American troops from Europe or simply refusing to defend allies under attack. None of this is good for America.

Europeans must act urgently. Rather than complain about Mr Trump, they should hurry to meet the 2% target and then raise it sharply: 3% of GDP is probably what is required to fulfil NATO's existing defence plans; without America, spending would have to be higher. America devoted nearly 3.5% of GDP to defence last year. Under-prepared Europeans face a more immediate threat.

Their agenda is daunting. They will need to invest in the many things that America provides at scale, from ammunition to transport and refuelling aircraft, command-and-control systems, satellites, drones and more. Europeans must also spend better, by buying more kit jointly and integrating their defence industries. They will have to think how to take over NATO's structures if America leaves (while holding open the possibility that it might rejoin). Germany's finance minister, Christian Lindner, has raised the most sensitive issue: how to preserve nuclear deterrence without America's umbrella. That would probably require new guarantees from Britain and France, which hold 500 nuclear warheads between them, against nearly 6,000 for Russia.

Nothing could make up for the withdrawal of American power. But rapid rearmament serves three vital purposes: it strengthens Europe's ability to help Ukraine and deter Russia; proves to Mr Trump that NATO is a good deal for America; and creates a hedge should he turn his back on America's allies. ■

Pakistan

Out of friends and money

A botched election and an economic crisis show how low the country has fallen

PAKISTAN'S ELECTION on February 8th featured state-of-the-art avatars and TikTok videos, but the question it poses evokes an old theme. How long can the country's relentless decline continue before it triggers a revolution, outside intervention or—hope against hope—political renewal?

For decades the generals have ruled nuclear-armed Pakistan directly or via a stage-managed democracy featuring a recurring cast of corrupt dynastic parties (and the occasional political disrupter). The main political clans agreed to back a new government on February 13th. Unfortunately, after a rigged vote, it begins plagued by illegitimacy and a mounting financial crisis.

The army prefers this shabby outcome. It fears that, if it cedes control of politics, it will forfeit its own economic privileges, and trigger instability that leaves the country vulnerable at home and abroad. Yet today's course involves an inexorable decline that may ultimately lead to the very same outcome.

The election had been a fiasco before any votes were cast. Pakistan's most popular politician, Imran Khan, a celebrity ex-cricketer turned rabble-rouser, was imprisoned on bogus charges at the army's behest before the poll, even though he had at one time worked with the generals. Independent candidates backed by his supporters won 35% of the contested seats all the ▸▸

same. That was impressive, but it was not a majority.

Instead the new, army-sponsored government will be backed by those two political clans, the Sharifs and the Bhuttos (their parties are, respectively, the Pakistan Muslim League-Nawaz and the Pakistan People's Party, and together won 49% of contested seats). The compromise prime minister, Shehbaz Sharif, promises "to save the country from political instability".

Is that possible? One scenario is that Mr Khan's young, often urban and now-enraged supporters rise up in protest at their exclusion. After his arrest in May 2023 they stormed military buildings in Lahore. Another is that the Pakistani Taliban, a local variant of the militant movement, takes advantage of the political turmoil and stirs up further violence.

Yet even if Mr Sharif's government can keep control of the streets, it faces financial chaos. In order to fund its trade deficit and meet debt repayments to foreigners, Pakistan needs to find $20bn-30bn of hard currency every year. It has less than $10bn of reserves, and its dollar bonds trade at 66 cents on the dollar, indicating a high chance of default. The best Pakistan can hope for is yet another short-term lifeline from the IMF.

Once Pakistan could have looked to outside benefactors for cash. Its 170 nuclear warheads mean that it will never be a strategic afterthought. But America is less interested in Pakistan than it used to be, following the wind-down of the war on terror and its exit from neighbouring Afghanistan. China remains Pakistan's "eternal friend" but even its state capitalists have grown tired of burning money on infrastructure there. Saudi Arabia, another ally, is focused on modernising at home and strengthening ties in the Middle East and with India (see Asia section). In the long run a semi-failed state in Pakistan could become India's problem, but for the time being the government of Narendra Modi prefers to focus on its country's own national renewal.

Short of a revolution, only the army and the elites can alter Pakistan's path. Military officers enjoy status, land grants and business opportunities, but also see themselves as principled guardians against chaos. In fact, they are agents of decline. Twenty years ago Pakistan's economy was 18% the size of India's; now that figure is only 9%. India's stockmarket is 137 times bigger than Pakistan's. Both India and Bangladesh have pulled far ahead in terms of GDP per person.

A lot of ruin

The need for a deeper political reset is more urgent than ever. Even the army brass should grasp that, on today's course, they will have less money to pay for soldiers and weapons—and less money to steal. Their immediate withdrawal from politics might cause mayhem, because Pakistan's institutions and parties have been infantilised. The change is so profound that it will require a new national consensus on creating independent institutions that can embrace clean politics and economic reform. Pakistan's army and its civilian elites need to engineer such a process, not profit from their country's decay. ■

Innovation

A shock to the system

How to make industrial electrification a boon to the climate and a bonanza for business

One of the more robust reasons for hope about the future of the climate comes from two simple facts and a delightful kicker. The facts are that electricity is a wonderfully versatile way of powering all sorts of things, and that lots of technologies can now generate it without emitting greenhouse gases. The kicker is that one of these technologies, solar power, is both very cheap and getting cheaper.

This suggests a simple strategy. Make the grid emissions-free and do everything you can with electricity. The obstacles to the first part of this nostrum—which include restricted access to capital in poor countries, constrained grid capacity and a lack of storage to offset fluctuating supply—are no less daunting for their familiarity. But they are increasingly the target of policy and investment. Last year, for example, the world spent more on new stationary electricity-storage capacity than it did on constructing nuclear-power stations.

To get the most out of all these efforts, though, electricity needs to become even more versatile. One of the key challenges is providing heat to industry. If you want to dry, cure, melt, smelt, set, distil, reform or otherwise change the state of something, as industrial processing so often does, heat tends to be involved. In 2016 providing such "process heat" produced almost seven gigatonnes of carbon-dioxide emissions, roughly 20% of all those from fossil fuels.

The fact that electricity does not have much of a record of providing heat has led to the idea that these emissions are "hard to abate". This is taken to mean that sorting them out needs new kinds of infrastructure. Carbon dioxide produced at the plant where the fuel is burned could be pumped into an underground repository, a process called carbon capture and storage (CCS); natural gas could be replaced by hydrogen. In the meantime, natural gas would continue to be used as a "bridge fuel" to a future both greener but also, alas, far off.

This presumption is now coming under attack. Innovative entrepreneurs and imaginative incumbents are finding ways to turn electricity into useful forms of heat, from scaled-up heat pumps of the sort used in some houses to space-age containers filled with white-hot molten tin and graphite plumbing (see Briefing).

These technologies offer advantages in and of themselves. Heat from renewable or nuclear sources is safe from volatile fossil-fuel prices. In general, heat pumps are a lot more energy-efficient than combustion. Systems that store heat for later use, sometimes called "thermal batteries", can be charged up when electricity is cheap, which is good both for owners and grid operators who increasingly want demand that can be managed.

The biggest advantage, though, is that when industries use clean electricity they slash their carbon-dioxide emissions. If the world is to keep global warming well below 2°C, as it very much should, that sort of slashing is mandatory. ▸▸

Unfortunately, this advantage reaches a company's balance-sheet only when industries come under some sort of carbon-pricing scheme. Such schemes have tended to concentrate on electricity generation. One reason for this is that, unlike electricity-generating companies, industrial producers compete in global markets. If their goods carry a charge for the carbon emitted in making them, these producers will be at a disadvantage to their untaxed competitors.

The obvious solution is a system of tariffs that level the playing-field: what is called a carbon border-adjustment mechanism. Such measures risk being captured by incumbents and becoming a channel for protectionism. But that risk is worth taking. If carbon prices are to cover more of the global economy, sorting out these trade effects well become necessary. In addition, well-designed adjustment mechanisms provide an incentive for industries outside the pricing system to decarbonise.

Pricing carbon emissions from industrial heat would help a phalanx of innovative technologies whose benefits to society are currently unrewarded. It would be bad news for the natural-gas suppliers that dominate the provision of heat. The effect on decarbonisation by way of CCS, either at the plants where heat is used or at the facilities which turn natural gas and steam into hydrogen, is harder to predict.

Worth a plug

Progress on CCS has been uninspiring, to put it mildly. Widely discussed for decades it is still, in operational terms, a rarity. It has not seen the sort of innovative ferment that electrification is exhibiting. Many climate advocates see it as an excuse for inaction that locks in fossil fuels as the default option.

CCS may, for all that, have a vital role to play, and sincere proponents of its potential should welcome the spur to innovation that increased uptake of electrical options will provide. It seems highly likely that some applications and some forms of industrial cluster will be best served by CCS or hydrogen. Competition is the best way to find out which. ■

Cities

Silicon rally

One of America's great cities has a fresh chance to rebuild itself

SAN FRANCISCO has long been a byword for municipal failure. Even as its techies minted money and transformed the world, its government was incapable of providing residents with basic shelter and security. Homelessness, drug overdoses and property crime were rife. Then covid-19 struck. The rise of remote work threatened to sound the city's death knell, as the tech industry took to its heels. As things have turned out, however, San Francisco has become host to an artificial-intelligence boom. Having been granted this piece of good fortune, the city must seize the opportunity to reform. This might be the best chance it gets.

Only a few years ago social disorder, toxic politics, eye-watering housing costs and the pandemic were driving people away. Venture capitalists (VCs) were splashing more of their cash beyond the Bay Area. Tech workers abandoned their offices, and sometimes the city entirely. As the downtown streets emptied of workers, homelessness and public drug use became more conspicuous and intrusive. "Retail for lease" signs covered the city like wallpaper.

People keen to write San Francisco's obituary warned of a "doom loop". Abandoned downtown property would lead to budget cuts and the erosion of public services, which would in turn accelerate the exodus. Many people worried that the city could go the way of Detroit, which suffered a painful bust when America's car industry started to build more plants in the suburbs and the South.

But the power of agglomeration is such that San Francisco has been given a fresh lease on life. As we report this week, the strides in artificial intelligence (AI) have only strengthened its claim to be the innovation capital of the world (see Finance & economics section). Its proximity to Stanford and the University of California, Berkeley, two AI centres of excellence, has helped infuse its startup scene with companies that deal in the technology. No other place in the world has as many AI firms or as much tech talent: from OpenAI and Anthropic to Databricks and Scale AI, almost all the big startups are based in the Bay Area. Venture funding is on the rise again, and last year the vast majority of funding for firms in the region went to startups in the city itself. Despite San Francisco's problems, and there are many, it remains a magnet for capital and talent.

All this offers the city an opportunity to fix how it is run. It helps that voters are fed up with their city's inane politics (owing to oppressive permit rules, the cost of one public toilet ballooned to $1.7m). From their posh neighbourhoods and their Silicon Valley headquarters, techies used to be content to watch San Francisco putrefy. Today, by contrast, the wealthy who live in the city feel a need to enter the political fray.

The first signs that San Francisco's residents were revolting against the status quo came in 2022 when voters ousted three members of their school board and recalled their ultra-progressive district attorney. They are not done yet. Local elections this year will be overshadowed by national races, obviously, but city contests in March and November will offer voters in San Francisco the prospect of real change.

Moderate Democrats, such as London Breed, the current mayor, are often stymied by left-wingers who resist building houses, cutting business taxes, shrinking the bloated budget or funding the police. Electing more moderates to the board of supervisors, San Francisco's name for the city council, could make all those things easier to accomplish.

Even if sensible folk get into office, making big changes will be hard. The local NIMBY movement is entrenched, and corruption has long been a problem. And yet second chances are rare. Young people want to live and work in the City by the Bay and to be part of a technological revolution that is changing the world. San Francisco can either capitalise on their excitement and set about fixing its problems—or sink back into complacency and squander an unforeseen opportunity. ■

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Chips and China

The Economist contends that technology controls on China are ineffective and counter-productive ("Picking losers", January 27th). I take a more positive view. The purpose of export controls is to raise costs to competitors by impeding access to better technologies. Those who impose and implement such controls are well aware that countries subject to them try to circumvent them through smuggling, buying substitutes from alternative suppliers, or developing replacement products. These activities are costly. Smuggling is a poor substitute for having an established arrangement with a supplier. For products that need a steady source of chips, it is impossible to guarantee a secure supply if one relies on smuggling. The current embargo on microchips to Russia has had a notable impact on Russian arms production even as the Russian government has sought to purchase chips illegally.

During the cold war, export controls caused the Soviet Union to invest heavily in inferior electronics, diverting resources that could have gone to other uses. In the case of China, developing alternative chip-manufacturing equipment or cutting-edge microchips will be difficult, especially when Chinese companies and universities are hindered from participating in the free flow of ideas and technologies. China has many capable people, but when confined to collaborating solely with Chinese colleagues, they do not fully share in the developments taking place elsewhere. Moreover, China had pursued policies to develop its own technologies in these areas long before the embargoes. Being cut off from collaboration with Western companies is unlikely to make its efforts more successful.

The article notes that Nvidia will lose sales because of the controls. Many of the sales of Nvidia chips to China go into products that are then exported by China back to the rest of the world. One of the reasons the controls were imposed was to diversify suppliers of these products to Western markets. Many of Nvidia's chip sales will not disappear; they will go to countries that will pick up the assembly operations that used to take place in China.

In short, *The Economist* is wrong to say that controls are ineffective and counter-productive. They are leaky and do not preclude China from developing alternatives, but they impose costs that are much higher for China than for America and its allies.

DR KEITH CRANE
Senior economist
RAND
Arlington, Virginia

School choice

Your leader on charter schools overlooked a big factor influencing the educational effectiveness of public schools in America ("A charter for change", February 3rd). The overwhelming majority of American children are assigned to one local neighbourhood school based on their address, without a single tuition-free alternative. Although some K-12 students may be able to choose a "magnet" school instead, it will still be managed (and often mismanaged) by the same school district that operates their local school and all of the publicly funded schools in that geographic area. Charter schools, which are publicly funded schools authorised and regulated by state or local authorities, do not have students assigned to them, and their students are free to return to their traditional assigned school at any time.

Running a successful school requires persistent hard work, difficult choices and often uncomfortable conversations. Which organisation has the greater incentive to succeed in that difficult work? The traditional school, whose student admissions (and the funding per-student it represents) is virtually guaranteed, regardless of results? Or the school that must strive to meet its students' needs, or risk losing them and the public funding that came with them?

JAMES MILLS
Walnut Creek, California

Is the council tax unfair?

Regarding Britain's council tax, or property tax ("Fixing a hole", January 27th), councils are necessarily local, and it makes sense for the cost of the services they provide to be borne locally. So what if a dwelling of a particular value attracts significantly less council tax in one council than another? So what if one council's property prices have risen four times faster than another council's? What is relevant is whether there have been disproportionate price rises of the properties within each council. By all means revalue everything every ten years, but this is not a fundamental issue.

Moreover, a family of four in a £2m ($2.5m) "mansion" uses no more (and probably much less) council services than a family of four in a £250,000 semi-detached. A direct correlation between property values and council tax is both nonsensical and unreasonable.

NICK HILL
Penang, Malaysia

The neuro basis of bias

As a neurobiologist, I endorse fully the letter (January 27th) from Scott Simmons about the hopeless mismanagement of diversity, equity and inclusion. I hope that it is read meticulously by the leaders of all institutions, and above all the heads of human-resources departments.

The letter should be a wake-up call for bosses to take a mandatory course in the neurobiology of behaviour, instead of aping mindlessly the unscientific mantras of DEI. Any programme that deals with human conduct and does not take brain realities, as expressed in human conduct, into account is doomed to fail.

SEMIR ZEKI
Professor of neuroaesthetics
University College London

P.D.Q. Bach

As well as being a musical satirist, Peter Schickele was, perhaps inadvertently, an effective teacher in the history of music (Obituary, February 3rd). I first heard of him during my studies at university when I took a course on music appreciation (known to students as "name that tune"). The professor played for us a recording of Schickele doing colour commentary on a performance of Beethoven's 5th symphony. It was pointed out to us that Schickele's astounded remarks indicated just those aspects of Beethoven's music that shocked his contemporary listeners and made it revolutionary.

JOHN FOX
Mercersburg, Pennsylvania

Start making sense

I enjoyed the article on researching common sense, but I thought the definition was incomplete ("A slippery concept", January 20th). For many of us, common sense isn't related so much to factual information (a triangle has three sides) as it is to behaviour, specifically, our ability to understand and employ the norms of successful life.

Common sense says don't let your children play in traffic. Don't laugh out loud at your boss's big idea. Don't taunt a bear in the woods. Be very polite to the proctologist. And so on. How do we measure that ability?

CARL SESSIONS STEPP
Emeritus professor at the University of Maryland
Springfield, Virginia

I am reminded of an old saying. Two of the most common things are rare: common sense and common courtesy.

PHILIP RAKITA
Philadelphia

Letters are welcome and should be addressed to the Editor at
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BUDAPEST AND WASHINGTON, DC

"National conservatives" are forging a global front against liberalism

YOU MIGHT call Budapest a Mecca, were Islam not anathema to the pilgrims flocking there. An anti-Davos would be a better description: a place where conservative nationalists from all over the world gather to compare notes on how to defeat international liberalism. Either way, Hungary's capital is at the heart of a global movement to reinvent right-wing politics.

Viktor Orban, Hungary's prime minister since 2010, is one of the main proponents of the "national conservatism" that is newly ascendant in much of the world. "Hungary is saying outspokenly and loudly some anti-establishment things about migration, about the role of family, about gender, about the role of national sovereignty," says Balasz Orban, the prime minister's (unrelated) political director.

The Hungarian government has spent a lot of time and money trying to propagate this ideology. State-sponsored institutes and think-tanks have cultivated warm ties with right-wing American outfits expounding the politics of Donald Trump. Conferences bring together national conservative notables from around the world. At first glance, these powwows seem rather forced: the main thing Mr Orban, Mr Trump and Giorgia Meloni, Italy's prime minister, have in common is a tendency to rail against wokery, immigration and international institutions.

But just because the networking is orchestrated rather than organic does not make it meaningless. At the level of pure political power, the movement has been doing extraordinarily well. The Republican Party has been captured by Donald Trump and his merry band of America Firsters. All over Europe, national conservative parties are on the rise (see chart on next page).

Ms Meloni, who leads the Brothers of Italy, a party descended from admirers of Mussolini, took power in Italy in 2022. Of the European Union's five most populous countries (Germany, France, Italy, Spain and Poland) four have hard-right parties in government or polling at 20% or more (Spain is the exception). Right-wing populists that were once excluded from governing coalitions, such as the Sweden Democrats and the Finns Party, have become too popular to sideline. Coalition negotiations in the Netherlands could yet install Geert Wilders, a national conservative firebrand, as prime minister. Another, Marine Le Pen, is leading in early polls for France's next presidential election, to be held in 2027.

This new form of conservatism marks a radical departure from the sort that prevailed in the era of Ronald Reagan and Margaret Thatcher. Instead of sunny optimism and a view of America as a "shining city on a hill", as Reagan had it, it sees decline and "American carnage", as Mr Trump puts it. In place of muscular internationalism is a profound scepticism of foreign wars and multilateral organisations. Its economic policy is much more aligned with the left's style of thinking: sceptical of big business, willing to accept a large welfare state, concerned with working-class hardship and keen to preserve domestic industry and jobs through protectionism.

The time is right

Proponents of national conservatism argue that elections this year will cement it as the West's dominant right-wing ideology, dispelling any notion that it is simply a flash in the pan. "Just like in June 2016 when the Brexit vote shadowed Trump's November victory, I think you're going to see the European parliamentary elections ▸▸

in June of this year foreshadow a big sweeping victory for the populist movement in the United States," says Steve Bannon, a former adviser to Mr Trump who has spent years trying to light populist fires. "President Trump is our leader in this movement, but this movement has got permanency to it. Now it's in the process of building institutions. It's not going away. It's only getting more powerful and bigger."

Several concerns distinguish national conservatism from the "default liberalism of neocons and libertarians", says Yoram Hazony, an Israeli-American who runs a series of conferences called "NatCon" that aims to bring the movement around the world together: "immigration, hostility to what we could call wars of expansion...and the question: has the free market damaged the social fabric of the country?" In addition, "An awful lot of nationalists genuinely feel there is something like a neo-Marxist takeover of the educational institutions and the bureaucracies."

In his book, "The Virtue of Nationalism", Mr Hazony takes issue with foundational tracts of liberalism by Jean-Jacques Rousseau and John Locke, whose "political theory summoned into being a dream-world, a utopian vision, in which the political institutions of the Jewish and Christian world—the national state, community, family and religious tradition—appear to have no reason to exist."

Another influential thinker is Patrick Deneen of the University of Notre Dame, who argues that the current elite should be replaced with "a better aristocracy brought about by a muscular populism" who will use state power to advance the "common good"—at least as he understands it. In a book published in 2023, "Regime Change", Mr Deneen decrees this common good to be "integration", about which he is simultaneously verbose and vague, but which seems to mean, among other things, reuniting church and state.

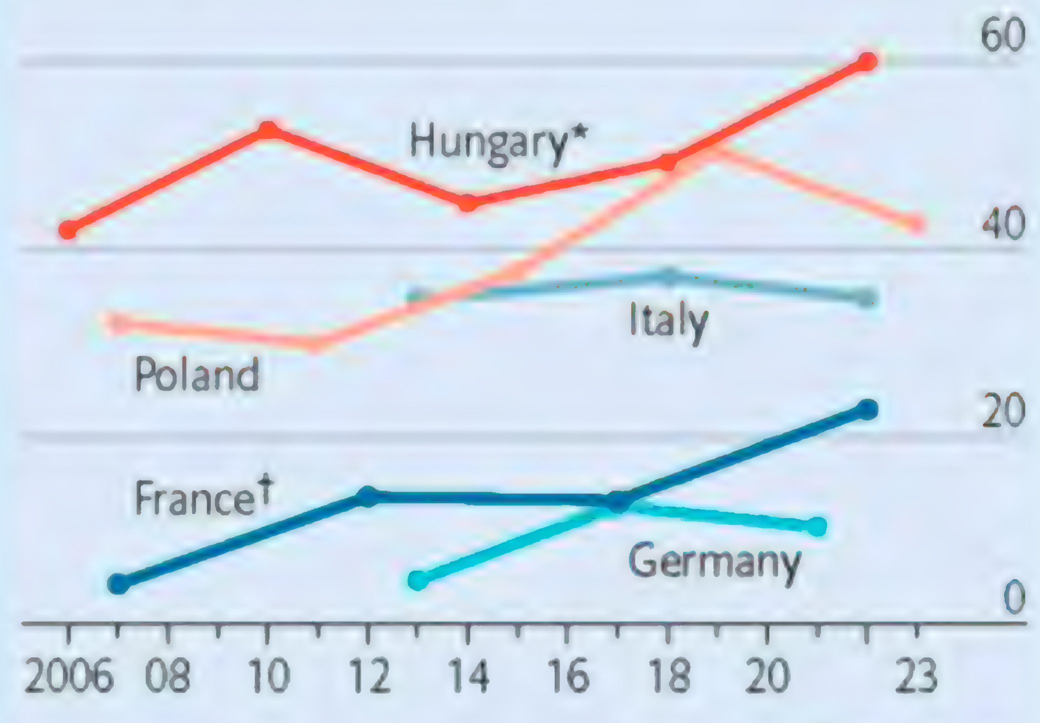
Right mind

These intellectuals and like-minded politicians are actively forging ties. Past attendees at Mr Hazony's "NatCon" gatherings include Mr Orban, Ms Meloni and prominent figures from America's new right, including Ron DeSantis, Florida's governor, and Josh Hawley and J.D. Vance, both senators. In Washington, established conservative think-tanks such as the Heritage Foundation have been overhauled in the national conservative manner. "It is national conservatism—and not the corporatist, secular, neoliberal establishment—that bears the standard of Thatcherism and Reaganism in the 21st century," declared Kevin Roberts, the president of Heritage, at a speech at NatCon in London in May.

On February 13th one of the architects of Heritage's Project 2025, a detailed plan to

Right is might

National conservative parties, vote share in parliamentary elections, %



Source: National electoral commissions

*Party list vote †First-round vote

defang the deep state in a second Trump presidency, arrived in Budapest to present his findings at an event hosted by a state-sponsored think-tank. CPAC, an annual meeting of the American right, invited Mr Orban to Dallas to give a speech in 2022. ("The globalists can all go to hell; I have come to Texas," Mr Orban exulted.) CPAC has begun holding annual conferences in Hungary, too, co-sponsored with the Centre for Fundamental Rights, a think-tank which receives government funding, albeit indirectly. Mr Wilders is expected to speak at the conference this year.

In Hungary national conservatism is a state-led project. In 2020 the Hungarian parliament donated shares in state-owned companies worth $1.7bn to the Mathias Corvinus Collegium (MCC), which educates talented young Hungarians at little cost, but with a distinct nationalist slant. As a share of Hungarian GDP, the donation was bigger than the combined endowments of Harvard, Yale, Stanford and Princeton are, relative to the American economy.

Kim Lane Scheppele of Princeton University considers MCC "a boot camp for Orban" that is "expanding its training programme to include right-wing allies from other states". Its leadership denies that it is a tool of indoctrination. "The main purpose is to find the most gifted, most talented people," says Zoltan Szalai, the director-general, who is also editor-in-chief of a pro-government weekly magazine called *Mandiner*. Mr Orban, the prime minister's political director, is chairman of the board.

MCC has branches in Hungary, Romania and Slovakia. It has opened a centre in Brussels that advocates a Europe of "sovereign states" and "strong borders". It is "against the culture war" and "unshackled from environmentalism". It has also set up outposts in Berlin and Vienna and plans to do so in Britain, too.

The Hungarian government also funds conservative think-tanks. It channels money to a foundation which in turn distributes it to think-tanks like the Centre for Fundamental Rights, the co-sponsor of CPAC Hungary, and the Danube Institute, which gives fellowships to foreign conservative intellectuals. The same foundation pays for two English-language publications, the *European Conservative* and *Hungarian Conservative*. Istvan Kiss, the executive director of the Danube Institute, says its purpose is to be "a kind of beltway between our region and the Anglosphere". Its chairman, John O'Sullivan, is a former speechwriter for Margaret Thatcher and editor of the *National Review*, an American conservative journal.

He is not the only Anglophone intellectual drawn to Budapest. Gladden Pappin, one of the first political philosophers to try to intellectualise Trumpism, is president of the Hungarian Institute of International Affairs, which reports to the prime minister. Mr Pappin says, "Hungary has a national interest in fostering like-minded, nationally oriented parties in the European level." That is necessary, he explains, because "Conservatives felt that liberal globalism was a kind of divide-and-conquer ideology and that conservatives had been kept incommunicado."

The networking has allowed national conservatives to borrow ideas from one another. Jaroslaw Kaczynski, the leader of Poland's former ruling party, PiS, imported techniques of state capture from Hungary. In Florida Mr DeSantis approved a law banning lessons on homosexuality and gender ideology months after Mr Orban's government did the same. Another Floridian law banning the teaching of critical race theory in universities and the takeover of a small college deemed too liberal also echo Mr Orban's politics.

Human right

There are shared policies on the family, too. The phrase "family friendly Hungary" is plastered across the airport in Budapest in multiple languages. Women who have large numbers of children receive big tax breaks, student-loan forgiveness and considerable aid in buying homes. In Poland one of PiS's most popular policies was a grant of 500 zloty ($125) a month for every child, which helped reduce child poverty markedly. In America, too, some on the right support payments for working parents ("workfare") as a way to help families, despite misgivings about the welfare state.

The desire to defend the family sometimes manifests itself as a fixation with fertility. "Perhaps you weren't expecting to have to think about making babies at 9 o'clock on a Monday morning," mused Miriam Cates, a Tory MP, at NatCon in 2023, "but if you want to be a national conservative, you need a nation to conserve." At a recent conference hosted by Ms Meloni, Elon Musk, the world's richest man, urged those present to "make more Italians to save Italy's culture".

Despite all these exchanges, however, national conservatives are a disparate bunch with lots of disagreements. There are deep divisions on economics, foreign policy and social affairs. America Firsters and Fidesz are resoundingly opposed to giving Ukraine additional aid to resist Russia's invasion, but the PiS was among Ukraine's staunchest allies when it was in government. In America, Hungary and Poland nationalists worry about gay and trans indoctrination of children; the most prominent nationalist conservatives in France and the Netherlands, Ms Le Pen and Mr Wilders, are more supportive of gay rights (which they trumpet in part as a way to bash Islam).

Mr Trump wants to impose big tariffs to protect domestic industry, whereas as much as Hungary's government rails against bureaucrats in Brussels, it has no plans to leave the EU and its single market. "We are against globalism as an ideology, not globalisation," explains Mr Orban, the prime minister's political director.

Ms Meloni provides a good case study of the internal contradictions of the coalition. Given her belligerent Euroscepticism before becoming prime minister, many had feared that she would ally with Mr Orban in his constant feuding with the EU. "While defending Italian sovereignty, we cannot forget to defend Viktor Orban's Hungary or Kaczynski's Poland, once again under attack from the European progressive mainstream," she declared at a NatCon conference held in Rome in 2020.

Yet in office she went along with other European leaders to suspend billions of euros in payments to Hungary over its dubious commitment to the rule of law. Ms Meloni has also strongly supported aid to Ukraine despite Mr Orban's objections, and helped twist his arm to allow a recent tranche of €50bn ($54bn) to go through. Since 1998 Ms Meloni has organised an annual conservative conference called Atreju (named after a character from the fantasy series "The Neverending Story"). In 2019 her honoured guest was Viktor Orban. Last year it was the thoroughly conventional prime minister of Britain, Rishi Sunak.

There is little agreement among national conservatives about what a post-liberal international order should look like. To win broader support—and perhaps after witnessing the painful contortions of Brexit—European national conservatives have backed away from Frexit, Huxit and Nexit. Hungary has used its veto within the EU and NATO to win concessions from its fellow members, but does not want either supranational organisation—from which it draws big benefits in the forms of direct subsidies and security guarantees—to be disbanded. For all of the complaints about globalism, most national conservatives do not seem to want to go it alone.

Indeed, some argue that national conservatism is so inchoate and incoherent that it is not worth taking seriously. But even movements with deep internal inconsistencies can reshape the world. In America, the Reagan revolution relied on "fusionism", an awkward assemblage of anti-communist hawks, anti-abortion social conservatives and libertarian free-marketeers, in order to rewrite the meaning of conservatism for decades. The First International and Second International were motley 19th-century assemblies of left-wing groups that collapsed in acrimony, but nonetheless helped propagate both communism and social democracy.

In 1934 Italian fascists convened a conference in Montreux, Switzerland, with the aim of sketching a universal theory of fascism. The effort was a complete failure. Nazi Germany had been excluded due to diplomatic conflicts with Italy. "The delegates at Montreux disagreed on almost everything of ideological substance: the centrality of fascist corporatism; race and the so-called 'Jewish question'; the role of Christianity...and, eventually, over the very balance between national independence and international collaboration," writes Aristotle Kallis, a historian of fascist movements. And yet, as divided as the fascist movement was, it still proved capable of igniting the second world war.

Right and wrongs

Modern-day national conservatives are not fascists, and are at pains to distinguish their movement from the destruction of the 1930s. Mr Hazony, for instance, claims that the Nazis were not true nationalists, but imperialists who sought to conquer Europe, and that real nationalism entails opposition to imperialism and other totalising ideologies, including liberalism.

Of course, in practice, nationalists often overlook the distinction Mr Hazony is drawing. Vladimir Putin, Russia's president, bases his authoritarian power on corruption and the appropriation of nationalist causes. He embraces the Russian Orthodox church, seethes at Western thanklessness about the Soviet Union's sacrifices during the second world war and telegraphs revulsion for foreign immorality. To justify his invasion of Ukraine, he served up a smorgasbord of nationalist propaganda, insisting that the two countries were part of the same Slavic nation.

When George Orwell pondered the question of nationalism in the waning days of the second world war, he wrote of its dangers this way: "Nationalism is power hunger tempered by self-deception. Every nationalist is capable of the most flagrant dishonesty, but he is also—since he is conscious of serving something bigger than himself—unshakeably certain of being in the right."

Much the same criticism could be levelled at many national conservatives. Although some, like Ms Meloni, govern within the rules, many of the movement's most prominent figures, including Mr Trump, Mr Orban and Mr Kaczynski, are so convinced of their own correctness that they do not mind subverting the state to maintain power. Courts are not seen as an important independent check on the executive, but as an obstruction that ought to be made more pliant. The media are treated in much the same way. Mr Trump even went as far as trying to overturn an election.

National conservatives insist that their movement is compatible with, not antagonistic to, democracy, yet most of its prime exponents are intent on retaining power. It already dominates right-wing politics across much of the Western world. The elections of 2024 could help it to dominate politics, full stop. ■

Employment and wages

Bending toward justice

WASHINGTON, DC

A tight labour market has done more for racial progress than any number of DEI schemes

IT IS A grim fact of American life that black people have long lagged well behind white folk in the world of work, with higher unemployment, lower wages and a larger share giving up on job searches altogether. A much more hopeful fact is that many of these inequalities now appear to be shrinking. In the half-century before the covid-19 pandemic, the black unemployment rate was on average twice as high as the white one. At the end of last year jobless rates were, respectively, 5.2% for black Americans and 3.7% for white people—equalling the narrowest gap on record.

Even more striking are shifting tides in labour-force participation. About 63% of black Americans are now deemed to be either in work or searching for jobs, more than the 62% level for white Americans—an inversion of the pattern seen in previous decades. In part this reflects demographic differences, because the median white American is about a decade older than the median black American and thus more likely to be retired. But it also testifies to better job prospects for black Americans: their median earnings were about 84% of those of white Americans at the end of 2023, a sharp rise from the 79% average of the preceding two decades.

The underlying cause of all of these changes is America's run of economic strength. The labour market has been so tight for the past couple of years that it has benefited all workers but especially the most marginalised, helping to create opportunities that were once much harder to come by. Although it is only natural to worry whether these advances will endure when growth eventually slows, it is important to recognise that, for the moment, they are reducing some of America's most persistent inequalities.

→ Also in this section

The improvement for black Americans has been broad-based, with gains for blue-collar and white-collar workers alike. Eddie Smith in Charlotte, North Carolina was struggling to get by with occasional jobs mixing concrete until last summer, when he took a four-week course to obtain his commercial driver's licence. Now he pilots an 18-wheeler and delivers crates of beer around the city for a base salary of about $60,000. "It's the best job I've ever had. The pay is good, and I work at my own pace on my own schedule," he says. He is not alone. According to official data, the economy has added about 1.6m jobs in "transportation and material moving"—a category which includes driving delivery trucks—since the end of 2019, and about 20% of these have gone to black Americans, above their 14% share of the population.

At the opposite end of the labour market is Lloyd Bolodeoku, a senior in computer science at Bowie State University, one of America's historically black universities. He has already accepted a job offer from Adobe, a software company, and will start in a cyber-security role in May, mere days after he graduates. Mr Bolodeoku recalls the words of a teacher from his high school just outside Baltimore, where the student body was more than 90% black: "His saying was you either want the router or you want the spatula." That is, if you do not learn about technology, you may end up flipping burgers. Although black Americans are still underrepresented in high-tech work, they have gained about 130,000 ▸▸

jobs in computer-related occupations in the past three years.

One reason that a strong labour market is valuable for black Americans is that many work in highly cyclical sectors such as freight delivery. That makes them vulnerable to recessions but also well placed during periods of growth (a similar dynamic exists for Hispanics). A tight labour market also blunts some of the discrimination that black applicants may face when looking for jobs. "During cyclical downturns employers can afford to pick and choose, but when workers are really needed, they are penalised for their biases," says Michelle Holder, an economist at John Jay College, City University of New York.

The evolution of America's economic structure is probably also playing a role. Concentrated in lower-skill jobs, black men were hit especially hard by the decline of factories and unions from the 1970s on. But lower-skilled workers are once again in high demand in a range of occupations that are increasingly central to the economy, from stocking warehouses to assisting nurses. Real-wage growth for the bottom 10% of earners has consistently outstripped all others since 2020—a boon for black Americans.

Another factor is a decline in incarceration. About 590,000 black adults were in prison in 2021, down by more than a quarter from a decade earlier. Black Americans are still nearly five times more likely than white ones to go to jail, but a lower incarceration rate is progress nonetheless, freeing more people for work.

Sam Schaeffer, head of the Centre for Employment Opportunities, which helps Americans find work after leaving prison, has also seen increased openness to "second-chance hiring" by companies. He says that stems in part from executives making commitments to racial justice but also, crucially, from the tight labour market. One of his organisation's success stories is Mr Smith, the beer-delivery man in Charlotte. He was behind bars for 34 years before getting parole. Many firms were afraid to hire someone with his background, but thankfully not all. "It's just hard for them to find drivers these days," he says.

A strong labour market is, by itself, far from a cure-all for racial inequality. Although the black-white wage gap has narrowed in the past two years, the wealth gap has widened over the same period, because white Americans own more stocks than black Americans and so have benefited more from the market rally.

What's more, unfairness goes well beyond hiring decisions. For decades the received wisdom was that black Americans would pull closer to white Americans if they had similar academic qualifications. But Valerie Wilson of the Economic Policy Institute, a think-tank based in Washington, DC, has shown that wages for black and white college graduates have instead drifted further apart in recent decades. "In addition to pay discrimination, a lot has to do with disparities in the jobs that people go into and in opportunities for promotion," says Ms Wilson.

Always be closing
United States, aged 16 and over

Source: Bureau of Labour Statistics

One question is whether historically black colleges, which produce about 40% of America's black engineers, can help reverse this dismal trend for graduates. The computer-science department at Bowie State, where Mr Bolodeoku is finishing his degree, has built up an internship-placement programme that links students with companies and government agencies, starting in their first year and continuing throughout their studies. "They get to be mentored and get the confidence they need," says Rose Shumba, chair of Bowie's computer-science department. Not coincidentally, its enrolment has more than doubled from 190 in 2019 to about 500 today.

For black women more generally, investment in early education would be even more significant. A big stumbling block for their careers is the need to raise young children. Nearly 50% of black children live only with their mothers, compared with less than 20% of white children. That is one of the motivations for the Biden administration's proposal to subsidise child care and make pre-kindergarten free, a policy which would need a Democratic sweep in the election later this year to get through Congress. "You would get a return on investment both in terms of lifting kids out of poverty and freeing up their parents to be able to pursue more opportunities," says Lael Brainard, director of the National Economic Council in the White House.

For now, the test of whether black Americans are truly faring better in the workplace will arise whenever the economy next hits a soft patch. Historically, many have fallen prey to a "last hired, first fired" mode of employment. But William Rodgers of the Federal Reserve's branch in St Louis is cautiously optimistic that a future downturn may play out differently. He has homed in on some of the workers most likely to be fired—young black Americans with no college degrees—and found that their unemployment rate has barely risen since 2022 even as the number of job openings has fallen. This, he thinks, may be a sign that gains of the past few years are sustainable. "People have come in, gotten a toehold and built up experience," he says. With any luck, more black Americans will go from last hired to lastingly hired. ■

Ukraine funding

House of cowards

WASHINGTON, DC

The House supports Ukraine but the speaker won't let its members vote

AMERICA'S CONGRESS does not have a reputation for productivity, but its failure to authorise more aid for Ukraine is unusual even for the underachievers on Capitol Hill. And the legislation's already grim prospects are diminishing as the presidential election approaches.

On February 13th the Senate approved a $95bn bill. Most of that funding is meant to assist Ukraine and replenish America's dwindling weapons stocks. The legislation also includes $14bn for Israel, $9.2bn for humanitarian relief and some $8bn for the Indo-Pacific. Almost every Democrat and 22 Republicans voted in favour.

That is as far as the legislation is likely to go. A wing of isolationist Republicans has always opposed helping Kyiv, but now some legislators previously supportive of Ukraine argue that they shouldn't help until America resolves its border crisis. Donald Trump, aiming to keep America's immigration mess as a campaign issue, ordered Republicans to oppose a compromise. He also has insisted any foreign assistance should come in the form of loans to be repaid in the future.

Chuck Schumer, the Senate majority leader, called on the House to take up the bill, as it would almost certainly pass the House if voted on. But Mike Johnson, the Republican House speaker, listens more closely to Mr Trump than he does to Democratic senators. "The mandate of national-security supplemental legislation was to secure America's own border before sending additional foreign aid," Mr Johnson said before the bill passed. "Now, in the absence of having received any single border policy change from the Senate, the House will have to continue to work its own will."

Republicans apparently had the great misfortune of getting what they asked for. First, they demanded that the border and Ukraine be linked. When Senate negotiators offered the toughest immigration law in decades, most Republicans rejected the offer. A foreign-aid-only bill passed, and now Mr Johnson is complaining that it does nothing to control immigration.

Republicans have such a small majority in the House that a few anti-Ukraine congressmen could challenge Mr Johnson as speaker if he were to allow a vote on military aid. He could theoretically offer amendments or restart the whole process, though there is little evidence that this House is capable of doing much. He could also split the bill into pieces and offer separate votes for Ukraine and Israel, for example, though that too appears unlikely.

Perhaps the only hope for Ukraine funding is a parliamentary manoeuvre known as a discharge petition. The time-consuming, multi-step process allows a simple majority of the House to force a vote on legislation. The mechanism could take more than a month to play out, and it hasn't been successfully used in nearly a decade. Both sides seem to agree the tactic is unlikely to succeed.

Even though a majority of the House still supports Ukraine, many Republicans don't feel strongly enough to defy House leadership and Mr Trump. It's one thing to support Ukraine; it's another to risk losing a primary to a Trump-backed challenger. And some House Democrats plan to reject the bill because of its support for Israel. Every Democratic defection will require another Republican to step up.

Time is running out for Ukraine funding, but it's not the only item on Mr Johnson's agenda. The House impeached Alejandro Mayorkas, the secretary of homeland security, on the same day that the Senate passed the aid bill. Without legislative action, a partial government shutdown will begin on March 1st. Mr Johnson says that is where he has directed his attention now. Yet a lapse in government funding looks increasingly likely: House Republicans have shown themselves to be as feckless on setting a budget as they have been on helping allies. ■

Cousin marriage

All in the family

WASHINGTON, DC

Cousin marriage is probably fine in most cases. It is also illegal in 25 states

IT JUST SEEMED so wrong. In January Nick Wilson, a Kentucky state legislator who achieved reality-TV fame for winning "Survivor" in 2018, created a frenzy on social media when he sponsored a bill that removed "first cousin" from the list of incestuous family relations. Mr Wilson said that the omission was a mistake and the bill was quickly withdrawn. The new draft put "first cousin" back on the list of criminal sexual relations, alongside parent, sibling, grandchild and other blood relatives.

Since much of Kentucky is covered by the Appalachian mountains, a region stereotyped for encouraging incestuous sexual behaviour, jokes quickly spread online. The reactions on X (formerly known as Twitter) ranged from humour to disgust to fear for the resulting offspring. Only a few pointed out that in many states it is legal to have sexual relations and marry one's first cousin. Is it really OK to kiss your cousin?

Geneticists mostly say that it is, with some caveats. In 2021 the National Society of Genetic Counsellors (NSGC) published updated guidelines for consanguineous couples (people descended from the same ancestor) and their offspring. The risk to offspring is greater, but the increase is quite small. According to the Centres for Disease Control and Prevention about 3% of all babies born in America have birth defects. The NSGC guidelines state that for "couples with no known genetic disorders in the family, there is an additional 1.7% to 2.8% risk for significant birth defects."

Many other couples face far higher risks of genetic complications for their offspring, and those unions are not banned. Classic Mendelian genetics (the kind taught in biology class) predicts that if two people each have a recessive gene for certain disorders, such as cystic fibrosis or sickle-cell anaemia, there is a 25% chance their child will be born with that disorder. Yet those marriages are allowed. "The law against first-cousin marriage is a major form of discrimination," says Robin Bennett of the University of Washington's department of medicine, who was a co-author of the NSGC guidelines. For offspring "the risks are very low and not much different than for any other couple," she says.

Throughout Western history attitudes about consanguineous marriages have varied. The Bible does not directly ban sexual relations between cousins—how else would all of mankind have descended from Adam and Eve? The Roman Catholic Church did later prohibit first cousins from marrying, though exceptions were made for a fee. Martin Luther, the father of Protestantism, objected to such payments, so many Protestant denominations allowed these marriages free of charge. As is clear from novels such as "Mansfield Park" and "Wuthering Heights", the people of Georgian and Victorian England were not too squeamish about such relations. Queen Victoria was married to her first cousin, as were both Albert Einstein and Edgar Allan Poe.

In some cultures, marriage between close family members is encouraged today. It secures wealth and reinforces social connections within the family. It might even make marriages easier, on the optimistic assumption that the in-laws are more like-

ly to get along. In some areas of the world (Pakistan, the Middle East), nearly half of all marriages are between close relations. No European countries ban marriages between first cousins (though Norwegian policymakers recently debated doing so).

There are limits to the amount of intermarriage that is healthy. Charles Darwin, the father of evolutionary biology, who married his first cousin in 1839, was reportedly conflicted about his own arrangement. The Darwins had ten children, but three of them died during childhood and three of his surviving children never had any offspring with their spouses. Some historians surmise that the children suffered from genetic abnormalities due to their parents being closely related—the families of Darwin and his wife had a long history of intermarriage.

Yet despite the fairly low genetic risk for most couples, the "ick" factor prevails in Western culture. The family dynamics can be difficult to explain to others. Many consanguineous couples choose to keep quiet, says Ms Bennett. For this reason it is difficult to know how many of these couples exist in America.

Despite the fact that first-cousin marriages are pretty low-risk for offspring, 25 states do not allow first cousins to marry. In six states, it is legal to marry a first cousin, but with caveats (if one person is unable to reproduce or elderly, for example). However, if Mr Wilson's experience in Kentucky is indicative of the public's reaction, it will be a long time before such laws will be stricken from the books. ■

Social media

Parler games

NEW YORK

The far-right's favoured social-media platform plots a comeback

AH, TWITTER IN 2020. X was just a letter in the alphabet. Elon Musk was preoccupied with implanting computer chips into pigs. Donald Trump wasn't yet banned, though his tweets were loud, alarming—and getting fact-checked by the platform itself. Tired of liberal big-tech companies telling them what they could post, some Republicans had started to defect to a rival platform launched two years earlier: Parler. It looked similar to Twitter, but with less content moderation. More began to announce their migration from the nest with the hashtag #Twexit. "Hey @twitter, your days are numbered," tweeted Brad Parscale, then Mr Trump's campaign manager, with a link to Parler.

Parler has since earned a darker reputation. Messages exchanged on Parler have been presented in court as evidence to convict rioters who broke into the Capitol on January 6th 2021. Misinformation and far-right conspiracy theories shared on the platform came to the fore. The app was taken off the Apple and Google app stores (although it was later restored). A legal battle with Amazon Web Services, the cloud platform that hosted Parler, ensued. For a brief moment in 2022 Kanye West, a controversial rapper, attempted to buy it. The app eventually went down altogether.

Now it is promising a "big comeback" after being acquired by PDS Partners, a Texas-based company. Parler rejects its association with January 6th. Shortly after the insurrection, the platform's previous ownership denounced "Big Tech's scapegoating of Parler" in a letter to the House Oversight Committee (HOC) and said that Parler had shared concerns about violent activity with law enforcement before January 6th.

"Many people organised to be at that event on all different platforms," says Elise Pierotti, the firm's returning chief marketing officer. "Parler was the only one that was scrutinised." Ms Pierotti, who claims that Parler's move to return in an election year is coincidental and that the firm is "not thinking about politics", says that the platform will allow users to say that the 2020 election was stolen ("because that is a personal opinion") and that mail-in ballots are fraudulent. "When it comes to open discussion, or people presenting, you know, different ideas, that's not up to us."

Fancy meeting you here

Parler is not the only fringe platform to have won favour among those on the right, but it is the best-known. Nor was it the only social-media service to be cited in the House's January 6th report, though the committee notes that it found "alarmingly violent and specific posts that in some cases advocated for civil war" on Parler. "It's hard to imagine that the brand itself, the name Parler, has shed the public understanding of the app as being a place [where] many who were part of January 6th got organised and shared resources," says Joan Donovan of Boston University.

Will fans of Parler return? Twitter (now known as X) looks very different under Mr Musk's ownership; these days it is liberal users who threaten to go elsewhere. Mr Musk has dismantled or weakened X's fact-checking tools as part of his own free-speech crusade, claiming that the platform "has interfered in elections". He recently shared posts about America's "insane" voting system and why "you can't trust the media" to his 172m followers (by comparison, Ms Pierotti estimates that Parler had almost 20m users at its peak).

If Parler does return, how concerning would that be? Social media's ability to influence extreme political acts is notoriously difficult to quantify. Several papers published since January 6th 2021 have begun to paint a more nuanced picture of the link between platforms of all stripes, polarisation and violence. Parler's unique contribution to January 6th is "very unclear", reckons Daniel Karell, a sociology professor at Yale University who co-authored a study on Parler, platforms like it and civil unrest. He found that while it is unlikely someone could have been radicalised by posts on Parler alone, the platform did attract like-minded people with extreme views and gave them a space to affirm each other's ideas. In other words, a loosely moderated forum made storming the Capitol seem almost like a normal thing to do.

As private, encrypted channels—which can offer both unfiltered conversation and fewer prying eyes—grow in popularity, such conversations will become harder to see. One thing supersedes the power of content moderation altogether: the charismatic figure that rallies others to their cause (or social platform of choice). Ms Donovan says her own research into networked incitement has found a common thread among those who were arrested at the Capitol: "they came because Trump asked them to, very simple." Whether Parler's user base will return or grow remains to be seen. The conversations it hosted never went away. ■

Court reform

Justice never sleeps

ROOM 130, MANHATTAN CRIMINAL COURT

New York's Night Court is troubling, but longer hours serve the public

"I APPRECIATE EVERYTHING that you've done," Judge Jonathan Svetkey told a team of defence lawyers at a recent Night Court arraignment in Manhattan. The lawyers had asked for their client to be released under supervision. They had been working on getting mental-health services and a bed for the night. The judge was sceptical the defendant would accompany them to a shelter. "What if he says, 'I'm going the other way?' What are you going to do?" He set bail for $5,000. Judge Svetkey moved on; Night Court usually must handle 70-90 cases a shift.

By day, Manhattan's Criminal Court is a bustling building. Long queues snake through the metal detectors at the entrance. Lawyers, jurors, defendants and police fill the corridors. But come 5pm, the building clears out, except for two courtrooms, which remain open until 1am to handle arraignments.

Night Court has been around a long time, and without it, New York City's criminal courts would be even more badly backlogged than they already are. These days, however, late shifts in courts also reflect a national effort to use alternative hours to improve efficiency and engender public trust in the justice system.

To aid rule-breaking drivers who hold down day jobs, many Californian counties offer late hours for traffic court, from 5pm-7.30pm. Forced online by covid, courts around the country continue to hold virtual hearings. Getting to court might be unsafe if someone needs a protection order against a violent partner, so Cook County, which includes Chicago, offers remote proceedings from 9pm until 3am on weekdays, as well as on weekend afternoons. Alternative hours can be used to increase participation, among other benefits, says Danielle Hirsch of the National Centre for State Courts, a non-profit group that promotes court innovations.

Swamped by criminal defendants, New York embraced alternative hours before it was a cause of better-government types. Until 2003, Manhattan's arraignment court was open 24 hours a day. A third session known as the "lobster shift" ran from 1am until 9am. But during the 1990s, Gotham became one of the safest big cities in America. Fewer arrests meant fewer arraignments. More recently district attorneys have stopped prosecuting marijuana-possession cases, which used to jam up arraignment court. But the remaining shift of Night Court remains busy most nights.

Arrests related to domestic-violence are rising. The influx of migrants has put a strain on the city's social and judicial services. More migrants are appearing before a criminal-court judge, often for shoplifting necessities such as nappies or stealing something to sell on. A few face charges for more serious crimes such as assault.

New York City law requires, with some exceptions, that defendants appear before a judge within 24 hours of arrest. It would be difficult to meet this goal without Night Court. The arraignment process is no different from during the day. The prosecutor presents the charges and requests that the defendant post bail, be released under supervision or be remanded to jail. Perhaps because it is night, however, some of the emotions seem heightened and many of the defendants can look fragile. Shelter and other services are not as readily available at a late hour, which can be especially worrying on cold winter nights.

Late-night feelings

As in day court, many defendants have mental-health issues and some suffer from drug addiction. Most are poor. Some do not have coats. One former Legal Aid Society lawyer says she had to run out to a 24-hour pharmacy to buy shoes for a client. Taramanie Sukhu, an arraignment supervisor, often shares food.

Ed McCarthy, of Legal Aid, has been working Night Court for more than two decades. He says there is not always a social worker available in the evening or on weekends. (Court is in session seven days and nights each week in New York City.) Defendants can languish at Rikers Island, the city's largest and most notorious jail, Mr McCarthy says, "only because there's nobody to offer a programme or a way of giving judges reasons to release you."

Aubrey Fox of New York City Criminal Justice Agency, a charity supporting pre-trial defendants, says that an infrastructure to promote release instead of detention does function quietly in the background. For every person held at Rikers, nine are released into the community. Many are candidates for treatment and other social services. About 85% make all their court dates. "That gives judges more confidence that if they release someone they will be taken care of," Mr Fox says.

Night Court is one place where this triage begins. The public gallery tends to be quiet, except for the occasional family member. One family drove from Michigan when a close relative was arrested. The late-shift courtrooms also attract tourists. Kathrin Kolvenbach, a trainee lawyer from Germany, said she had heard about it from a guidebook. She was there to learn about America's court system. Others are there to gawk, looking for gritty entertainment. Tourists give Night Court tips to each other on Tripadvisor, a travel website. One defence lawyer said seeing tourists, who tend to be white Europeans, leaves a bad taste in her mouth and unsettles her clients, who are mostly African-American or Hispanic.

Krystal Rodriguez, policy head of the Data Collaborative for Justice at John Jay College, says arraignments both night and day are a "snapshot of how the criminal-justice system becomes the unfortunate repository for all these other social issues that outside of the criminal legal system we haven't been able to address". Many Americans learned about Night Court from an eponymous sitcom that ran from 1984 until 1992. It was recently rebooted and is not very funny. There are few laughs in the real one either. ■

Keeping the lights on

Lexington | Donald Trump's tremendous love

His politics may seem hostile, yet he talks like a Valentine's Day card

What does Donald Trump talk about when he talks about love? For the man presents himself as being full of it. He is associated with a politics of grievance and retribution that has boiled over at times into violence, most infamously in the attack on the Capitol on January 6th 2021. And yet no other president, or presidential candidate, has so wreathed himself in valentines.

In speeches and blast emails, Mr Trump romances his supporters with constant reminders of his love. Among those for whom he has declared his love over the years are "the Hispanics", "the Saudis", "the poorly educated" and officers of the Central Intelligence Agency. His heart often has reasons of which reason would appear to know nothing. Like Titania he has tumbled for the most improbable of creatures ("We fell in love," he gushed of North Korea's supreme leader, Kim Jong Un). Like Rihanna he has found love in hopeless places, including the Soviet Union ("you could see it was a country where there was a lot of love") and even in that crowd on January 6th ("There was a lot of love out there. There was tremendous love").

Pretty much by definition, presidents are not normal people. But even by their abnormal standard Mr Trump is an unusual character. His detractors like to point out that he had a head start in life as the son of a millionaire real-estate developer. They may not give him enough credit, though, for how through daring, determination and a certain ethical flexibility he willed himself into becoming a billionaire, a flamboyant celebrity, a reality-television star and then the president—how, like F. Scott Fitzgerald's Jay Gatsby, Donald Trump "sprang from his Platonic conception of himself". His insistence on this conception overwhelmed the scoffers at his candidacy eight years ago, bulldozed most Republicans into believing he did not lose in 2020 and may now persuade Americans to return him to the White House.

Biographers of Mr Trump have recounted how, as he discovered he could dominate and bamboozle others, he acquired some contempt for them as well. Once he became known for his wealth people would claw at him for favours. He marvelled, as a candidate in 2015, how easy it was to woo voters with the slightest gesture.

Wayne Barrett, a New York journalist who was probably the closest student of Mr Trump's rise, fall and fragile recovery into the early 1990s, writes in "Trump" that people who worked for the mogul longed for him to find love but "did not really believe he had the capacity for it." Mr Barrett quotes one such person as saying Mr Trump was "unaware of his own tragedy" and then continues, "As they saw it, his deeply ingrained remoteness was so much a part of his unexamined life that he neither understood it nor regretted it." When one friend, irritated by Mr Trump's uninterest in his troubles, accused him of being a shallow person, he replied, "That's one of my strengths."

The Great Gatsby was laid low by love, but that seems to have little chance of undoing The Donald, as his first wife, Ivana Trump, called him. Outsiders can never know what really goes on inside a marriage, but journalists, lawyers and the participants themselves have rendered some of Mr Trump's marriages more transparent than most. Ideals of love have not tended to predominate.

"If you don't marry me you'll ruin your life," were the words with which Mr Trump proposed to Ivana, according to her book "Raising Trump". "Continuing love and affection was not a material part" of their nuptial agreement, read a court filing from Mr Trump as the couple split up. "I was bored when she was walking down the aisle," Mr Trump later recalled of Marla Maples, the woman for whom he left Ivana. "I kept thinking, 'What the hell am I doing here?'" Probably no Valentine's Day card will ever invoke Mr Trump's advice about how best to behave toward women: "You have to treat 'em like shit."

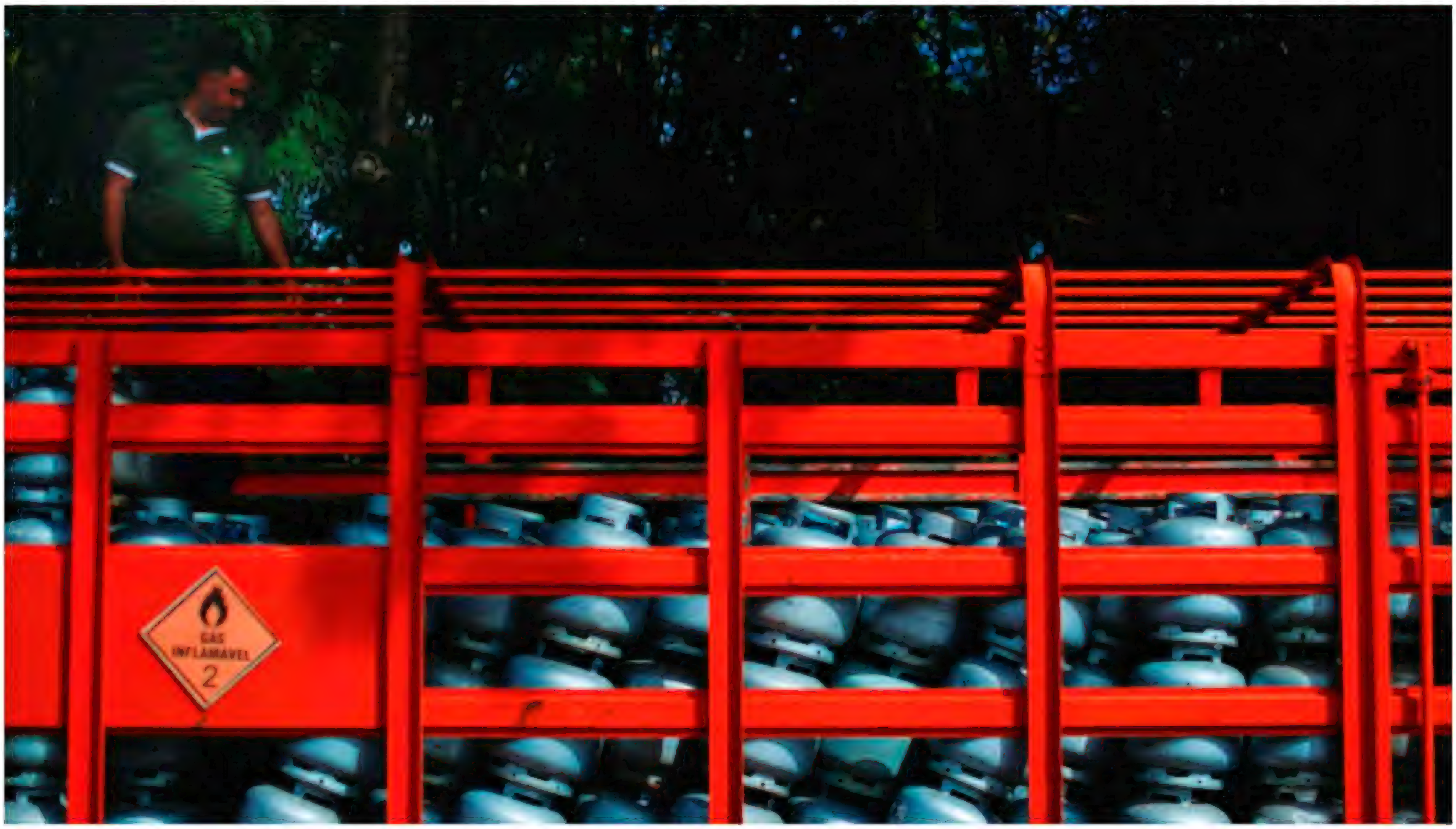
Outside his family, Mr Trump did not express much love for the people who helped build his fortune. "Look at those losers," he remarked to an associate as he watched people gambling in one of his Atlantic City casinos, according to "Confidence Man" by Maggie Haberman.

To Mr Trump, hate could be a virtue. Back in 1989, New York's mayor, Ed Koch, urged citizens not to have rancour toward five black youths arrested for the rape of a white jogger in Central Park. Mr Trump, then beginning to dabble in politics, took out full-page ads in the four daily New York papers calling for reinstatement of the death penalty and declaring, "I want to hate these murderers and I always will." The youths served years in prison, but even after they were exonerated Mr Trump would not recant, saying in 2014 that they did "not exactly have the pasts of angels". (Hate can mean never having to say you're sorry.)

As president in 2020, Mr Trump attended the National Prayer Breakfast, devoted that year to the theme of "loving your enemy". "I don't know if I agree," he mused, when he stepped behind the lectern. He had recently been impeached for the first time and was not inclined to forgive people he thought of as enemies. "They have done everything possible to destroy us," he said, "and by so doing, very badly hurt our nation."

Say that you love me

Mr Trump's love has limit and conditions. He seems to need to feel appreciated and admired, to feel loved, and then he will complete the transaction by declaring his own affection. "I'll never stop loving you," he vowed in a recent mass email seeking donations. "Why? Because you've always loved me!" That is a deal his supporters are eager to make. They have their own unmet needs for recognition and affirmation. They know their guy is not perfect; in fact, it seems probable that when their love swears he is made of truth they believe him even though they know he lies. They will not risk his love by doubting him. This codependence has become the strongest force in American politics. ■



Oil in Brazil

The perils of Petrobras

RIO DE JANEIRO

Lula keeps meddling with Latin America's top oil company

On February 1st Petrobras, Brazil's state-owned oil company, reached a value of $551bn reais ($112bn) on the country's stockmarket, a record in the local currency. Its shares have outperformed those of ExxonMobil and Chevron in the past year. Months before, it had laid out an investment strategy costing $102bn over the next five years, the largest such plan for nearly a decade. Most of the investment will go to the expansion of offshore basins in the country's south-east, known as the pre-salts, and the development of new offshore fields in the north-east. The expansion could help Brazil become the world's fourth-biggest oil producer by the end of the decade, up from seventh today, according to Rystad Energy, a consultancy.

Yet despite the glowing headlines, investors should be vigilant. Under the administration of President Luiz Inácio Lula da Silva (or Lula), who was previously in power from 2003 to 2010, the government is increasingly meddling in Petobras's decisions, after several years during which state interference had declined. That is leading to poor business choices. It also increases the possibility of corruption.

Petrobras's success is all the more striking given its recent history. In 2014, under Lula's hand-picked successor, Dilma Rousseff, Petrobras was found to be at the centre of a sprawling kickbacks scheme in which it doled out contracts at inflated prices. Contractors paid bribes to certain executives at Petrobras using this extra cash. These executives and contractors also funnelled money to dozens of politicians.

Under pressure from Ms Rousseff, Petrobras lost $40bn between 2011 and 2014 by keeping domestic petrol prices artificially low. Partly in order to pay for this, and partly because interest rates were low, the company took on enormous dollar-denominated debts. When oil prices collapsed in 2014, the corruption scandal erupted and the real depreciated, Petrobras hit a nadir. By 2015 it had debts totalling almost $130bn, making it the world's most-indebted oil firm. The following year it had lost 90% of its value compared with 2011.

→ Also in this section
26 Chile's continuing crisis

The company owes much of its turnaround to Pedro Parente, a far-sighted CEO who was appointed under the centrist government of Michel Temer in 2016. When asked to take the helm, Mr Parente says he set two conditions: "The company has to be guided by good business principles, and there must be no political interference." Mr Temer acquiesced for a while.

Mr Parente ran Petrobras like a private firm, despite the government having a controlling vote on the board. The domestic price of fuel was linked to its cost on international markets. To raise revenue and pay off debts, Mr Parente sold billions of dollars worth of assets in fertilisers, distribution and petrochemicals. The company also focused on the business of drilling for deep-sea oil.

Oil be back, interfering

To prevent another corruption scandal, Mr Parente set up an independent compliance department and a robust channel for whistleblowers. Crucially, it has become harder for corrupt executives to make individual procurement decisions. Now a team of managers from different departments must sign them off. By 2021, the value of the company was around $70bn and its debts were down to $37bn.

For a while, politics helped. In 2016 Brazil's Congress passed the "state-owned companies law", which made it harder to appoint politicians to state-owned firms. ▶▶

But this gentlemen's accord began to unravel in 2018, when Mr Parente resigned after lorry-drivers went on strike to demand lower fuel prices. Mr Temer's populist right-wing successor, Jair Bolsonaro, appointed four CEOs in as many years, including a general with no previous experience in oil. Mr Bolsonaro also appointed three political allies to Petrobras's 11-member board, even though many people worried they lacked industry experience.

Lula has not only continued this political interference, but ramped it up. Like Mr Bolsonaro, he forced two of his picks onto Petrobras's board shortly after taking office, despite Brazil's securities and exchange committee deeming them ineligible: one is a politician; the other works for the energy ministry. More worryingly, Lula's intervention also goes further than his predecessor. Jean Paul Prates, the new CEO, supported a campaign promise Lula made to "Brazilianise" fuel prices—meaning to lower them.

In May the firm announced changes to its pricing policy that lowered the cost of diesel and fuel prices from its refineries by 12%, and cooking gas by a fifth. Though Petrobras does have leeway to lower prices within market parameters by using its own refineries more, the new pricing policy is confusing. Adriano Pires, an energy analyst in Rio de Janeiro, calls it "a black box". Markets reacted positively to the announcement not because of the policy's merits, but because they had been expecting more intervention. It is unclear how the policy will work when oil prices rise.

Yet even this was not enough. Alexandre Silveira, the energy minister, has repeatedly criticised Mr Prates for not lowering prices more. Petrobras's blockbuster new business plan appears to respond to pressures from Lula to boost local jobs, diversify into renewable energy and expand Petrobras's reach abroad.

The government is also trying to reverse Petrobras's divestment policy. Petrobras's big new investment plan includes an 80% increase in investments for refineries, transport and marketing. In November Petrobras cancelled the $34m sale of a refinery it had agreed to sell in 2020, claiming that the terms of the contract had not been fulfilled. The purchaser, Grepar, is demanding compensation.

It is unlikely the government will stop there. Partly as a result of the corruption investigations after 2014, Petrobras signed a deal with Brazil's antitrust body in which it pledged to sell eight of its 13 refineries in the country in order to reduce its dominant market share. It had put four of these up for sale, including the one bought by Grepar, and was preparing to let go of the other half, too. In November the government asked the antitrust body to review the agreements on the sale of refineries. Mr Prates says that Petrobras's ownership of refineries is not monopolistic and that "it's a false obligation to sell those refineries". Petrobras is currently in negotiations to take back partial control of a refinery that was sold to Abu Dhabi's sovereign-wealth fund in 2021, and which accounts for 10% of Brazil's oil-refining capacity.

Lula's recent moves suggest he has not learned from past failures. On January 18th he announced that Petrobras would expand a refinery in his home state of Pernambuco that has been mired in scandal for years. Lula suggested the reason the refinery was incomplete was because the United States does not want Brazil to become an oil power and was in cahoots with anti-corruption prosecutors. In fact, in 2016 a federal court determined that the cost of building the refinery had been inflated by a fifth. It never operated at capacity and caused Petrobras to lose over $3bn.

Other unsettling signs abound. Last March Ricardo Lewandowski, then a judge on Brazil's Supreme Court, suspended a section of the "state-owned companies law", thus allowing national firms to appoint politicians to leadership roles if they want to. (Mr Lewandowski is now justice minister.) Minority shareholders on Petrobras's board resisted changing the company bylaws, but in November the government overpowered them.

Mr Prates said the change was "innocuous" because it simply aligns Petrobras's bylaws with a change in federal law. But Marcelo Mesquita, the representative of minority shareholders on the board, disagrees. "As an isolated case, this may not be a scandal. But it is the beginning of a 'let's see [how much we can get away with]' approach. It shows the government is worried about something."

Brazil is unlikely to experience the kind of gigantic corruption scandal it did in 2014. The firm's compliance mechanisms are stronger. The scandal traumatised Petrobras employees, making them more vigilant to graft among higher-ups. In addition, the government has less power over Petrobras than other Latin American governments do over their national oil firms. Despite it having the controlling vote on the board, the vast majority of capital in Petrobras comes from private stakeholders. Mr Pires thinks the problem with Lula's Workers' Party is that it "treats Petrobras as if it were 100% state-owned."

Though it is unlikely that Petrobras will plummet to the depths it did a decade ago, the government's recent moves could undermine the company's hard-won success. Mr Mesquita says minority shareholders "made a lot of noise" when it changed its bylaws. "If you are not constantly vigilant, things can go back to the way they were." That would be bad news for Petrobras, and worse news for Brazil. ■

Democracy in Latin America

From model to muddle

SANTIAGO

Chile's crisis is not over yet

A SENSE OF fatigue hangs over Santiago, the capital of Chile. Since 2019 the place once considered the poster child of Latin America has instead been the site of tumult. This has included the election of Gabriel Boric, the country's most left-wing president in half a century, along with the growth of a powerful party of the hard-right. There have been two failed attempts to write a new constitution. To top it all, this month deadly forest fires have raged. Can Chile get back on track?

For a quarter of a century after the end of the dictatorship of General Augusto Pinochet in 1990, the country had moderate, consensual politics and faster economic growth than much of Latin America. Those living below the official poverty line fell from 45% of the population in the mid-1980s to 9% in 2017. By that year two-thirds of Chileans were middle class, up from 24% two decades before, according to the World Bank. With its vigorous market economy and a commitment to the rule of law, Chile was one of the few countries in the region that looked likely to reach developed status within a generation.

Stability was shattered in 2019 by what Chileans call *el estallido social* (the social explosion). This involved two months of massive protests and vandalism, in which metro stations and several churches were destroyed by arson and supermarkets looted. The conservative government of Sebastián Piñera, who died this month in a helicopter crash, came close to falling. The demands of the protesters were for better pensions and health care, free education and an end to "the neoliberal model" originally installed by the dictatorship. What

Small but mighty

GDP per person, $'000, 2015 prices

Source: World Bank

Heat of the moment

they got was an agreement from the politicians to set up a constitutional convention to replace Chile's charter of 1980.

The convention that was voted in was dominated by the far left. It wrote a utopian text that was plainly unworkable. In a plebiscite in 2022 this was rejected by nearly 62% of voters. That was a crushing defeat for Mr Boric, who was elected on the back of the *estallido* and whose Broad Front coalition had supported the revised text.

There followed a second convention in which the right won a big majority, led by the Republican Party, a newish hard-right outfit. It made the same mistake: the draft was filled with conservative moralism and was rejected by 56% of voters in a plebiscite in December last year. That in turn was a rebuke for José Antonio Kast, the founder of the Republicans who lost a presidential run-off to Mr Boric in 2021.

Constitutional cracks

"Chile shows that it's very difficult in a democracy to start from a blank sheet of paper," says Sergio Bitar, a former minister of the centre-left. For some Chileans this outcome suggests a rejection of the political class as a whole. Did the first convention misrepresent public opinion? Or have priorities changed? It is a bit of both.

For a start, conservative concerns have become more prominent because of a crime wave. By regional standards, Chile remains a safe country. But the murder rate has risen from 4.6 per 100,000 people in 2021 to 6.5. Extortion and the use of firearms, previously rare, have spread, especially in poorer urban neighbourhoods. This has coincided with, and is partly linked to, the arrival of some 1m immigrants since 2015, many from Venezuela. Most are hard-working; some are part of criminal gangs. As a result, the demands of the protesters in 2019 have seemed far less pressing than dealing with crime.

A second problem is that Mr Boric overestimated his ability to implement change. Both he and the Broad Front came to office scorning the timidity of the centre-left Concertación alliance which governed Chile for 20 years until 2010, mixing respect for the market economy with gradual social reform. However, Mr Boric's party lacks a majority in Congress. His ambitious plans to raise taxes and reform pensions and health care have foundered in the face of a conservative opposition.

Mr Boric also inherited an overheated economy from Mr Piñera. Lavish pandemic aid combined with legislators' reckless approvals of early withdrawals from pension funds injected an astonishing 35% of GDP into the economy, according to Mario Marcel, the finance minister. Mr Marcel's first task was to apply a fiscal squeeze that cut the deficit by 10% of GDP in 2022. The independent central bank also raised interest rates. The result was a mild recession.

All this meant that Mr Boric had to move to the centre. He sacrificed his initial team of fellow former student leaders, and called on experienced cadres from the centre-left, including Carolina Tohá, the interior minister, as well as Mr Marcel. The government is now implementing several policies associated with the right.

Instead of its plan to increase the tax take by 4% of GDP, it now hopes for only half of that, mainly by cracking down on evasion, as part of a "fiscal pact" which also involves a promise to cut wasteful spending. It is pushing through a law aimed at cutting red tape. Instead of the promised abolition of private pension funds, the government is arguing with the right over the fine detail of how to assign a new employers' contribution to pensions.

A crackdown on crime includes laws to increase sentences and set up a national organised-crime unit at the public prosecutor's office. The government has given extra money and equipment to the police, vilified by the left for their sometimes brutal handling of the protests but now once again among the country's most trusted institutions. "Progressive politics can't flourish without security," says Ms Tohá.

Mr Boric has managed this shift with surprisingly little dissent. Achieving change "will be a long road", recognises Giorgio Jackson, Mr Boric's campaign chief in 2021. "The left understands that and so has given its consent to pragmatism." The president's approval rating quickly fell to 30% but has not sunk any further.

The assumption in Santiago is that the next government is likely to be of the right. Mr Kast remains influential, but his moral conservatism is rejected by many in an increasingly socially liberal country. He says he has his sights set on Congress. Moderation may prevail on the left too: the three parties in the Broad Front are poised to merge later this year. The new party will be "much more measured and less antagonistic but still critical," says Mr Jackson.

Nobody has any appetite for more constitution writing. But there is a need for reform. Congress has made that easier: it approved changes that have reduced the majority needed for constitutional amendments in the legislature from two-thirds to four-sevenths. Three big things need fixing: politics, education and the economy.

Take politics first. An electoral reform in 2015 scrapped rules that favoured a two-party system and introduced proportional representation. The result has been extreme fragmentation: the 155-seat lower house of Congress has 22 parties and 40 independents, making negotiation tricky.

In terms of education, between 1995 and 2020 public spending on it increased from 2.3% of GDP to 5.6%. Yet outcomes as measured in international tests have barely improved. Meanwhile an economic slowdown was a big—though not the sole—cause of the *estallido*. Mr Kast insists that the solution is to shrink the state and cut taxes. The left counters that while that formula produced growth under Pinochet, Chile's economy is now more sophisticated. Officials have high hopes for lithium and copper. Chile has ample reserves of both. They will help, but not enough. Growth now requires reforms to promote innovation and incentives for businesses to take risks, says Eduardo Engel at the University of Chile.

The *estallido* saw "a sense of guilt among the political class and business", according to Eugenio Tironi, a political consultant. But in many cases that was short-lived. To move on, the country needs broad agreements on questions of politics and growth. "If there's no flexibility and pragmatism to reach solutions, Chile could remain stuck in a cycle of frustration," warns Ms Tohá. ■

India and the Middle East

Ever closer

ABU DHABI

India is doubling down on its historic shift towards the Gulf Arab states

AS A FLEX of India's newfound geopolitical muscle, it was hard to top. Visiting the Middle East this week Narendra Modi stopped first in the United Arab Emirates (UAE), where he signed an investment treaty, headlined a rally of 40,000 Indian expatriates and opened a vast new Hindu temple. Then India's prime minister headed to nearby Qatar, having just secured the release of eight Indians jailed there for espionage. All the while, a dozen Indian navy ships were in nearby waters, helping to protect global shipping under threat from pirates and Houthi missiles.

The trip, which began on February 13th, thus neatly entwined some of the key strands—business, migration and security—of a historic shift in India's approach to the Middle East. Mr Modi is now injecting new momentum into arguably his most important diplomatic initiative since taking office a decade ago: downgrading relations with Iran and aligning India with Israel and the Gulf Arab states

The shift could pay huge dividends for all sides, boosting foreign investment to India in particular. It could also help establish India as a competitor to China on infrastructure and technology in the region. And it could add ballast to efforts by America and its Gulf Arab partners to stabilise the Middle East. But there are risks too. And those have intensified in recent months as violence has spread from Gaza into the Red Sea and beyond, threatening India's investments and expatriates, as well as its ships and cargo.

Mr Modi's visit was, to some extent, about politics back home. With a general election in India due by May, the rally in Abu Dhabi was part of a global effort to mobilise overseas Indians, a big source of political funding. Opening the temple there will further energise his Bharatiya Janata Party's Hindu-nationalist base, less than a month after he inaugurated one in northern India on the site of a mosque demolished by Hindu extremists in 1992.

The visit also reinforced a campaign message that Mr Modi is bolstering India's global stature, including in the Islamic world. Indian expatriates say the results are palpable in the UAE, which he has visited seven times since 2015, when he became India's first prime minister to go there since 1981. "Respect for Indians has really increased," says Biswajit Ray, a 43-year-old Indian banker at the rally. "We see it in our offices. We feel it walking on the street."

But electioneering is only a tactical cherry on the strategic cake. Though India's links to the Middle East date back centuries, its diplomatic influence there waned for decades after independence in 1947, largely because of Arab states' support for Pakistan. India's ties to Iran and solidarity with the Palestinians also stymied relations with Israel. Mr Modi now seeks to re-establish India as one of the region's essential players.

Consider the economic picture first. India's business links with the region used to be defined by its imports of oil and exports of cheap labour. In the past few years, however, bilateral trade has diversified, with the UAE emerging as India's second-biggest export market. Last year the two countries signed a free-trade deal aimed at doubling non-oil bilateral trade to $100bn by 2030. Indian commercial and political ties with Iran, by contrast, have dwindled after India stopped importing all Iranian oil in 2019 ▶▶

→ Also in this section

because of American sanctions.

At the same time, India has lured billions of dollars of investment from Gulf Arab states keen for a stake in the world's fastest-growing major economy. Emirati investment flows into India totalled $9.8bn in the half-decade to 2023, almost triple the figure for the previous five years. The UAE's largest sovereign-wealth fund has committed itself to investing $75bn in Indian infrastructure. Saudi Arabia's has pledged $100bn.

Big Indian companies have also won infrastructure contracts in the region as America presses Gulf Arab states to seek alternative partners to China. One of them, Larsen & Toubro, says that some 30% of its $55bn order book stems from the region, mainly Saudi Arabia. And Indian commerce with the UAE is expected to grow faster with the agreements Mr Modi just signed, including the bilateral investment treaty, a deal to link the two countries' digital-payment systems, and a commitment to advance a plan backed by America and the EU to establish a trade corridor linking India to Europe via the Middle East.

As business ties have grown, so too has the Indian diaspora in the Middle East. There are now some 9m Indian nationals in the Gulf Co-operation Council countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the UAE), up from 7m in 2013. The UAE has about 3.5m, representing 36% of its population.

They are still mostly blue-collar workers. But in recent years many more wealthy and middle-class Indians have been moving to the UAE, especially Dubai. Some migrated because of covid-19, which hit India hard. Many used the UAE's "golden visas" which since 2019 have granted ten years' residency to qualified professionals, entrepreneurs and investors.

The influx also reflects the UAE's efforts to emphasise inclusivity. Hence the new Hindu temple, which Mr Modi proposed in 2015. The UAE's president, Muhammad bin Zayed, allocated 27 acres of land for it. At the Abu Dhabi rally, Mr Modi hailed Sheikh Muhammad as his "brother" and thanked him for looking after Indian expatriates. "We are partners in each other's progress," Mr Modi said, pledging to elevate to new heights a relationship "based on talent, innovation and culture".

On the security front, the landscape has changed even faster. Israel has become one of India's top three weapons suppliers in recent years. Along with several Gulf Arab states, it is an important Indian partner on counter-terrorism. And now India is making a notable contribution to maritime security in the region, with its biggest-ever naval deployment there. India's navy has not joined the American and British force in the Red Sea that has hit Houthi targets in Yemen. It is focusing instead on piracy in the wider area, where it has investigated some 250 vessels, boarding 40. It is co-ordinating closely with America and Britain.

Mr Modi's pivot has suffered some setbacks. After breaking with Indian precedent by voicing strong support for Israel following last year's Hamas attacks, his government had to adjust its position a few days later to reaffirm support for a two-state solution. That followed intense criticism of Israel among developing countries, including China, which India sees as its rival for leadership of the "global south". India may have to recalibrate again if Israel's actions prompt Gulf Arab states to harden their own positions.

India was also shocked in October when a Qatari court condemned to death eight former Indian naval officers accused of spying for Israel. It is unclear how India secured their release but last week it signed a $78bn deal to extend imports of Qatari liquefied natural gas until 2048. There will no doubt be more challenges ahead. But as India's Middle Eastern interests expand, so does its appetite for risk. "India is now playing a game in which you'll get hurt sometimes, you'll get pushed around or you have to push other people around," says C. Raja Mohan of the National University of Singapore. "It's part of joining the big boys' club." ■

Campaign finance

Junked bonds

DELHI

India's Supreme Court delivers a rare setback for Narendra Modi

WHEN NARENDRA MODI took office in India a decade ago, he pledged among many other things to halt the rampant use of illicit cash in politics. His big initiative on that front was the launch in 2018 of electoral bonds, which enabled Indian individuals and companies to donate to political parties anonymously, but legally. His Bharatiya Janata Party (BJP) hailed it as a roaring success.

Opposition leaders and civic activists were thus elated when India's Supreme Court ruled the scheme unconstitutional on Feb 15th. A five-judge bench headed by the chief justice, Dhananjaya Chandrachud, also ordered the State Bank of India (SBI), the only entity that sells the bonds, to stop issuing them. The ruling was a rare setback for Mr Modi in the run-up to general elections due by May.

It is unlikely to affect the BJP's prospects in the election, which it is expected to win. The Supreme Court took several years to reach its decision on challenges brought by activists and the Communist Party of India (Marxist). In the meantime, the BJP was by far the biggest recipient of donations via electoral bonds, with many apparently coming from companies, according to the Association for Democratic Reforms (ADR), a non-profit among the Supreme Court litigants.

Parties got 92bn rupees' worth ($1.1bn) of bond proceeds in the first five years, of which 57% went to the BJP, according to Election Commission data analysed by ADR. Just 10% went to the BJP's main national rival, the Congress. More than half the bonds bought by July 2023 were for the maximum 10m rupees, probably purchased by companies. About a third were used by parties just before the last general election in 2019, ADR says.

Purchases have also sped up in the past two years, reaching a total of 73bn rupees, according to SBI data obtained through right-to-information requests by another activist, Lokesh Batra. The bank does not give a breakdown of recipients but the BJP is presumed to have taken the lion's share.

The case was an important test of the Supreme Court's independence, which the opposition has often questioned under the BJP's rule. It has also brought scrutiny to the links between Indian business and the prime minister. India's companies have long made political donations, often funding incumbents and opponents simultaneously to hedge their bets. But Mr Modi is especially close to a handful of Indian tycoons who have thrived in the past decade.

The BJP says that its donations reflect its share of seats in the national parliament and the number of state governments it controls (it governs 12 out of 28, versus three for Congress). In the BJP's telling, Congress triggered the influx of illicit cash into politics after its prime minister, Indira Gandhi, banned corporate funding in 1969 (her son, Rajiv, lifted the ban when he was in power in 1985). Indian companies also see Mr Modi as an effective, business-friendly administrator, BJP officials say.

Hogwash, say the scheme's critics. They argue that it did little to curb political graft, and stopped donors from funding opposition parties for fear that the government could gain access to donor data from state-owned SBI. The Supreme Court ruled that the opacity of the scheme violated citizens' right to information. The question now is: what is the alternative?

Pakistan's dodgy election

Generals, rejected

ISLAMABAD

Voters tell the army where to put it

NO PARTY OBTAINED a majority in Pakistan's election on February 8th. But the vote nonetheless produced a clear winner: Imran Khan, the imprisoned former prime minister who was barred from standing and whose party, Pakistan Tehreek-e-Insaf (PTI), was subject to a de facto ban.

Voters disregarded the hints to shun Mr Khan (pictured), casting their ballots for his candidates anyway. Members of the PTI, standing as independents, bagged 92 of the 264 parliamentary seats being voted on (70 reserved seats will be allocated proportionally). The Pakistan Muslim League-Nawaz (PML-N) of Nawaz Sharif, Mr Khan's chief rival and a three-time former prime minister, was widely expected to win. It limped in second with 75 seats.

Yet the PTI will not form the government. Instead, Shehbaz Sharif, Mr Sharif's younger brother and the president of the PML-N, is likely to become prime minister. On February 13th his party agreed to a coalition with the Pakistan Peoples Party (PPP), led by Bilawal Bhutto Zardari, which won 54 seats. Asif Ali Zardari, Mr Bhutto's father, will be the nominee for president. The younger Mr Sharif appears to be backed in his efforts by the army chief, who praised the "free and unhindered" election and called for "stable hands" to put an end to "anarchy and polarisation" in the country. PML-N has also approached Mr Khan's winning candidates to switch sides. At least one has already jumped.

Mr Khan's party claims to have evidence that it would have won a majority of seats if the election had not been rigged. It has already begun to challenge the results in court. Mr Sharif's party denies the allegations. "How can they claim rigging when they are the single largest party in the National Assembly?" says Khawaja Asif, a PML-N leader in Sialkot.

Yet signs of tampering are plentiful. The election commission, which had been instrumental in obstructing Mr Khan and the PTI in the run-up to the election, blamed days of delay in releasing results on unspecified "internet issues". It initially barred returning officers from certifying results and ordered a repeat of the vote in dozens of polling stations after reports of snatched and destroyed ballot papers. But it soon reversed course and confirmed results in disputed constituencies.

The dubious electoral process was preceded by a systematic campaign, orchestrated by the army, against Mr Khan and the PTI. The election commission stripped the party of its electoral symbol, a cricket bat, in effect dissolving it. The Supreme Court sealed the deal by overturning a successful challenge to this in a lower court. Many PTI leaders were imprisoned or disqualified. Those who stood as independents were prevented from campaigning openly. A week before the election Mr Khan, already in jail on a separate charge, was sentenced to three long prison terms in quick succession on counts of corruption, disclosing state secrets and getting married illegally.

That the PTI succeeded despite all this is a rebuke to Pakistan's army, which for the past few months has ruled the country from behind the scenes through a loyal caretaker government and tried its best to force Mr Khan and the PTI into political irrelevance. The result may, some hope, prove a turning point in the generals' ability to influence Pakistan's politics.

Yet the immediate consequence for Pakistani voters will be more of the same. Though blatant rigging in some instances could be reversed by legal challenges, the PTI will be confined to the opposition benches. The Sharif-Bhutto coalition set to take power is very similar to the one that took over after Mr Khan was forced from office in April 2022 and ruled until parliament was dissolved last August. The only difference is that it will enjoy even less legitimacy this time around.

That bodes ill for Pakistan, which faces an economic crisis, an escalating threat from terrorism and an increasingly hostile neighbourhood. Pakistani voters have made it clear that they are tired of the old way of doing things. Their leaders, predictably, have once more dashed their hopes for something new. ■

Winning hearts, if not power

Indonesia's uninspiring election

General, elected

JAKARTA

Prabowo Subianto will be Indonesia's next president

HOW HE HAS waited. In 1998, after the fall of Suharto, the dictator who ruled Indonesia for 32 years, Prabowo Subianto, his then son-in-law, manoeuvred to take over—unsuccessfully. In 2014 and again in 2019, Mr Prabowo ran to become president of what had by then become the world's third-largest democracy. Both times he lost to Joko Widodo, better known as Jokowi (and both times he falsely claimed the election had been stolen). But as voting closed on February 14th there remained no doubt that Mr Prabowo had at last clinched his prize: with reliable pollsters showing he had won nearly 60% of the vote in the first round, he will be Indonesia's next leader.

Mr Prabowo is a controversial former general with a worrying history who has rebranded himself as a cuddly grandad. His victory casts a shadow over one of Asia's democratic bright spots. Though Indonesia's democracy is flawed, many Indonesians cherish their suffrage in a neighbourhood dominated by juntas and autocrats. But prominent Indonesian academics, activists and journalists have labelled this election the most undemocratic since the start of *reformasi,* an era of rapid democratic development after Suharto's fall.

Much of the blame lies with Jokowi, who remains wildly popular and backed Mr Prabowo. In recent years he has eroded Indonesia's democratic institutions, including the once-independent anti-corruption commission. And throughout the campaign he faced accusations of interfering in the election. Anies Baswedan and Ganjar Pranowo, former governors who ran against Mr Prabowo, accused state agencies of arbitrarily cancelling their rallies and intimidating Jokowi's critics.

Jokowi and Mr Prabowo reconciled in 2019 when Mr Prabowo was appointed defence minister. Jokowi's eldest son, Gibran Rakabuming, ran as Mr Prabowo's vice-presidential candidate after the constitutional court (whose chief justice at the time was Jokowi's brother-in-law) delivered a ruling that in effect made Mr Gibran, who is 36, an exception to a rule that bars anyone under the age of 40 from running for president or vice-president. As Mr Prabowo declared victory to cheering fans at a sports stadium in Jakarta, a huge roar of support erupted when he mentioned Jokowi. Shouts of "Get back together!" went through the crowds when his former wife, Titiek Suharto, appeared on screen. ▸▸

Mr Prabowo ran on a platform of continuity, promising to build on Jokowi's signature policies. These include moving the capital from Jakarta to a site in the jungles of Borneo and a nickel-centric industrial policy that requires foreign firms to process and manufacture raw ore in Indonesia. Mr Prabowo is "continuity with improvement", says Burhanuddin Abdullah, one of his spokesmen.

A more worrying continuity may be in the form of pressure on civil society and the press, which have suffered under Jokowi's presidency. Now they are nervous about their place in Indonesia under Prabowo. At an event on February 10th, Mr Anies and Mr Ganjar both pledged to protect press freedom. Mr Prabowo was absent. Human Rights Watch, an advocacy group, said Mr Prabowo was the only candidate who did not respond to a questionnaire about human-rights issues important to voters. Mr Prabowo is accused of having kidnapped pro-democracy activists in the 1990s and of ordering the massacre of independence fighters in East Timor in the 1980s (he denies all wrongdoing). He has previously tried to abolish direct elections of regional leaders. What the country needs, he said, is an authoritarian leader.

Yet worries that Indonesia may plunge into a full autocracy are overblown, suggests Marcus Mietzner of the Australian National University: "Indonesian democracy is now weak enough that Prabowo doesn't need to completely overturn it," he says. "After all, he just won the presidency." That is not much consolation. Jokowi oversaw Indonesia's rapid economic growth even as he weakened its democratic institutions. Mr Prabowo will continue at least one of those trends. ■

Banyan Ocean promotion

Australia needs to rethink its approach to its Pacific island neighbours

FROM AUSTRALIA'S perspective the Pacific's island states have sat for decades in its backyard. Latterly a gatecrasher has stomped in. China has shaken Australian assumptions in the Pacific.

Australia has deep ties with the Pacific islands. It was the colonial administrator in Papua New Guinea (PNG) until independence in 1975. During unrest in the Solomon Islands between 2003 and 2017, it provided a policing mission. It has helped plug the budget holes of island states. They are "family", as an Aussie prime minister once put it—a word tinged with paternalism. On February 8th family was celebrated in Canberra with the first-ever address to Parliament by a Pacific leader, PNG's James Marape.

China is one reason behind the red carpet laid out for Mr Marape. PNG, immediately to Australia's north, is vital to its security. But China is wooing Mr Marape with infrastructure and investment. It can point to the gleaming Chinese-built or -refurbished stadiums and police headquarters that adorn towns in Fiji, the Solomon Islands and the Cook Islands. Such overtures have helped Chinese state firms gain a hold in the Pacific. China buys or extracts about half of the region's minerals, timber and seafood. Now another bonanza beckons, for seabed minerals.

China's political gains are also striking. Since 2019 the Solomon Islands, Kiribati and Nauru have switched diplomatic allegiance from democratic Taiwan to China, helped by financial inducements to ruling politicians. Most controversially, in 2022 the Solomon Islands' Australia-resenting prime minister, Manasseh Sogavare, signed a security pact with China. Chinese police sit in the capital, Honiara. A potential military base in the Solomon Islands would represent a big threat to Australia.

Concerns in Canberra are thus understandable. China is securing resources, buying political influence and seeking military access. It hopes for regional hegemony. That would mean imposing its will on vulnerable island states, as well as destabilising the regional order; though China promises infrastructure, investment and access to a huge market, its approach can corrupt local politics.

Yet Australia's response can be heavy-handed, notably over demands that island states upgrade their security relationships with it. A case in point is tiny Tuvalu. Late last year the two countries signed a ground-breaking treaty whereby Australia promised to help the atoll nation tackle climate change while offering rights to Tuvalu's citizens to settle in Australia. The treaty also included a security agreement to stop Tuvalu falling under China's sway. But the government that negotiated the treaty has since fallen, and opposition to the security deal is building.

In truth, Pacific countries do not prioritise hard security. Mark Brown, prime minister of the Cook Islands, says "development is the Pacific's number-one security priority," especially in the face of a warming planet. Even Mr Marape, a staunch friend of Australia's, was reluctant in January to invoke PNG's security treaty with Australia following deadly riots in the capital, Port Moresby, for fear of looking like Australia's lapdog.

Mr Marape faces a vote of no confidence this month, with the riots a factor in the political turmoil. In the Solomon Islands a general election, always a turbulent time, is due in April. Meanwhile, Tuvalu remains without a government. Some Australians wring their hands: China, with its back-room blandishments, navigates such crises with ease.

Australia cannot begin to match China's commercial clout. Still, its concerns are overblown; its Pacific strengths remain substantial. Whereas China's aid to the Pacific has fallen since the pandemic, Australia's still grows, accounting for two-fifths of all assistance, well ahead of the Asian Development Bank in second place and China in third. It offers education opportunities and technical assistance. A new infrastructure-financing facility competes with the corruption-heavy Chinese approach. It is boosting opportunities for work and immigration—hugely popular among Pacific islanders. And its "number-one weapon", as Mihai Sora of the Lowy Institute, a think-tank in Sydney, puts it, is sports diplomacy, with offers to bring Pacific rugby teams into Australian leagues. China wields no such soft power.

The lesson is clear. To counter China across the Pacific, Australia should broaden its horizons from security to match those of the island states themselves. There is no better way to trump the cynical Chinese approach.

Insular China

The half-open door

Tense geopolitics, a sputtering economy and security-obsessed officials are changing the way China interacts with the world

"NIHAO, CHINA" is the name of the country's latest effort to attract foreign visitors. The logo accompanying the phrase (which means "Hello, China") features a panda—an image always handy when China wants to seem cuddly. Chinese officials have been touring the West to promote the campaign, helped by a video in which happy-looking foreigners intone the Chinese greeting. Those with a deeper grasp of the language might sense a different mood, including billboards on city streets warning people to look out for foreign spies, and government propaganda on social media urging vigilance against threats to national security. The Communist Party often tells people that tourists, journalists and businesspeople could all be after China's secrets.

More than a year after Chinese leaders scrapped the "zero-covid" policy which had kept the country sealed off from most foreign visitors from early 2020 to the end of 2022, they are now pushing in two contradictory directions. Parts of the government appear eager to court foreigners. Last month China sent a large delegation to the World Economic Forum in Davos, Switzerland. Li Qiang, the prime minister, told the gathering that "no matter how the world changes, China will...open its door still wider to the world."

In at least one key respect this is true: China's trade in dollar terms is 31% higher than in 2019. But *The Economist* has looked at a range of other measures, from the number of flights and visits to China by foreign tourists to levels of academic exchange, investment flows and even the personal travel schedule of China's leader, Xi Jinping. They suggest a country overshadowed by a profoundly changing relationship with the West, a more security-driven style of policymaking at home and by the parlous state of its economy. China has become more inward-looking, as the West has become more wary.

At the most basic level, far fewer outsiders are crossing borders into China. Last year the country recorded about 62m fewer entries and exits by foreigners than in 2019, before the pandemic began—a drop of more than 63%.

Behind these figures lie deeper trends. Take the geopolitical environment. In the three years during which China shut its borders to prevent the spread of covid, and its leaders hunkered down at home, the West, led by America, was engaged in a wide-ranging rethink of how to cope with China's rise as a global power.

President Donald Trump focused on trying to cut America's trade deficit with China, but his administration sought to push back on other fronts, too, including efforts to contain China's military activity. There was no let-up after Joe Biden became president in 2021. In the following year Russia's invasion of Ukraine drove the wedge between the West and China even deeper. China had just called itself a "no-limits" partner of Russia. Mr Biden ramped up controls on the export to China of advanced semiconductors.

The invasion threw up an unexpected obstacle to the restoration of normal flows of people between China and America. In response to Russia's aggression, America and its allies barred Russian airlines from using their airspace. Russia imposed a tit-for-tat ban. This has impeded the reopening of aviation routes between America and China that were severed during the ▶▶

pandemic: America does not want to give an advantage to Chinese airlines by allowing routes to reopen, when those airlines could save time and fuel, and therefore gain passengers, by flying over Russia.

At a meeting in November Mr Biden and Mr Xi agreed to "work towards a significant further increase in scheduled passenger flights". According to OAG, a travel-data firm, in February 2019 there were 1,219 scheduled direct flights from China to America. In February 2024 there are 269 (see map). According to FlightAware, an American flight-tracking website, Chinese airlines are avoiding Russia on newly approved routes.

In part, America is to blame for a reduction in contacts between the two countries that were once considered routine. In 2022 it ended a Trump-era campaign by the Department of Justice, known as the China Initiative, whose aim was ferreting out Chinese spies in American academia and business. The scheme had become mired in accusations of racial profiling. But ditching it has not put scientists at ease.

Worried about being accused of helping China by sharing advanced know-how, American researchers have become increasingly wary of collaborating with their Chinese counterparts. In 2020 the number of science papers jointly produced by Chinese and American researchers began to fall. "That is certainly a consequence of the political environment" in America, says Jonathan Adams of Clarivate, an analytics firm. Of China's internationally collaborative research papers, the share involving American co-authors has fallen from a peak of 47% in 2013 to 32% in 2022, the company's data show (see chart 1).

Journeys to the West

At America's borders, officers have become twitchier about Chinese entering for study. Chinese diplomats complain that some students with valid visas are being subjected to lengthy interrogations, often about Chinese government backing for their projects. They say a few of them have been sent back. Deborah Seligsohn of Villanova University in Pennsylvania, who has been studying Sino-American exchanges in science, says she knows Chinese academics whose research is "completely uncontroversial" who have been subjected to such questioning.

China, scheduled flights to the United States
Heavier line=more flights
Source: OAG Aviation

Among foreigners mulling trips to China, memories have been slow to fade of the sometimes brutal enforcement of its zero-covid measures. China now all but ignores covid (it abolished the last vestige of pandemic control in November, by ending the need to fill out a health-declaration form on arrival). But potential visitors are "still fearful at the back of their minds about potential lockdowns," says John Grant of OAG. "You know, the horror stories that we've all heard about...all of that impacts consumers' perceptions of the market."

China's state-controlled media like to highlight examples of American mistreatment of Chinese people. Such cases serve a propaganda campaign that portrays the West as racist and a builder of barriers and of menacing security networks that are aimed at keeping an innocent China in its place. Perhaps intentionally, this depiction of the West may be deterring some Chinese students from going to America: in the academic year of 2022-23 they numbered about 290,000, down from a peak of more than 370,000 in 2019-20.

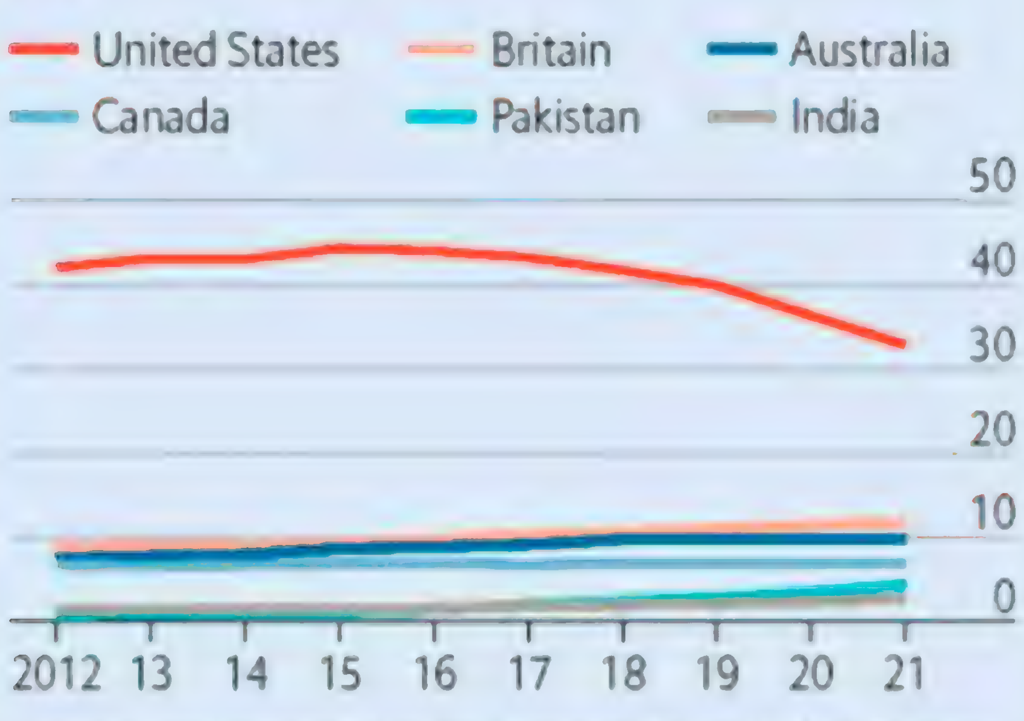
Mr Xi likes to present his own country as a champion of global engagement (in a world laden with doubt about globalisation, he describes it with striking confidence as an "irreversible trend of the times"). In reality he seems less inclined to travel abroad. In 2023, after the better part of three years without venturing overseas, he spent only 13 days outside the country, compared with a more typical 28 days in 2019. In September last year he shunned an annual gathering of G20 leaders in India, despite having attended previous such events in person or online. He did, however, travel to San Francisco in November for a summit of the Asia-Pacific Economic Co-operation forum. There, at his first face-to-face meeting with Mr Biden for a year, he insisted that for America and China, "turning their backs on each other is not an option".

Many Chinese officials survey their struggling economy, with its collapsing property firms and mountains of debt, and still see benefit to be gained from the West's markets, capital and technology. Mr Xi is maintaining military pressure on Taiwan but does not appear ready for an all-out clash with the West that an assault may entail. In December China resumed military-to-military communications with America, having suspended them for more than a year in protest against high-level contact between America and Taiwan. The door is barely ajar: China's armed forces share little in such dialogue. But the message is that Mr Xi wants a stable relationship with the West. He appears not to want Westerners to rush for the exits.

That is evident in the "*Nihao*, China" campaign. Since December tourists from France, Germany, Italy, the Netherlands, Spain and Switzerland, as well as Malaysia, have been allowed to visit China visa-free for 15 days. Russians may be close friends, but they do not enjoy such a concession.

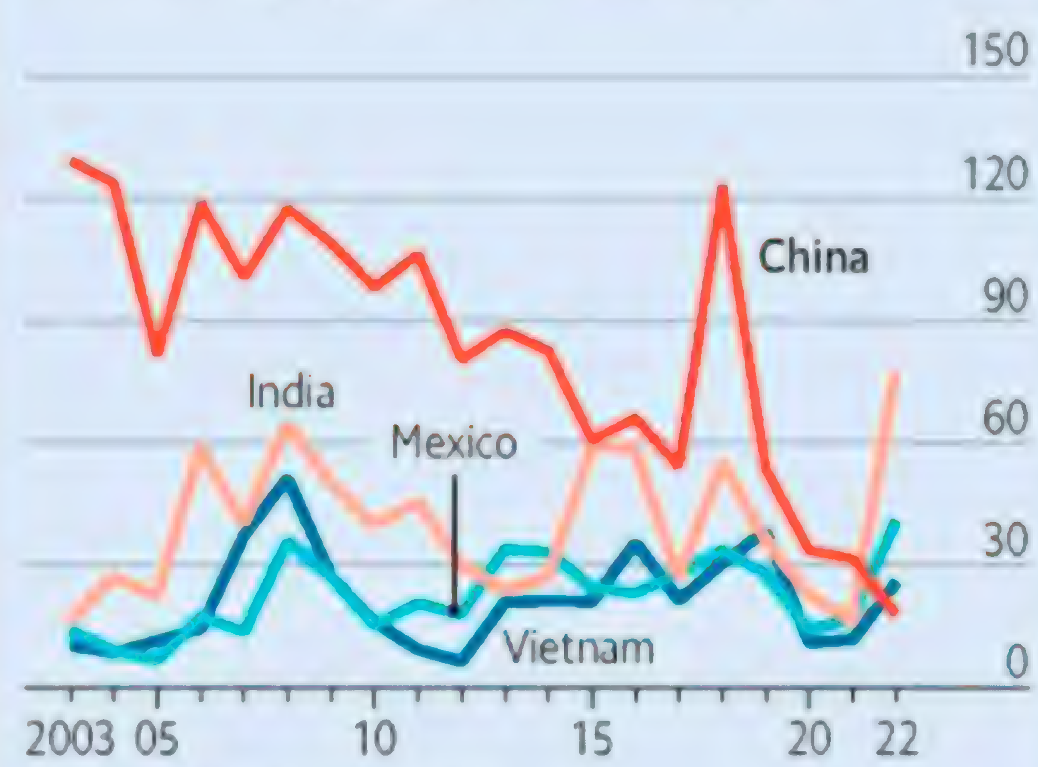
Many Western businesspeople, however, worry about China's shaky economy and the government's heavy hand over it. Foreign direct investment in greenfield projects in China has declined from more than $87bn in 2013 to less than $18bn in 2022 (see chart 2). Flows of portfolio investment into China have been negative for the past four quarters as global funds dump Chinese equities (see chart 3). Foreign businesspeople are anxious about the

Written off 1
China, % of internationally co-authored papers* with an author from:



*Articles and reviews in journals indexed in the Web of Science
Source: Clarivate

No field of dreams 2
Announced greenfield foreign direct investment projects, by destination, $bn



Sources: UNCTAD; World Bank

growing assertiveness of China's secret police: raids last year on foreign consulting firms in China rang alarm bells. On February 1st the American Chamber of Commerce in China released its annual survey of member companies' mood. Nearly 40% said they believed foreign firms were less welcome in China than they were in 2022, a year when many businesses were battered by covid-related lockdowns. Mr Xi is "living in his own world, surrounded by the security people", says a prominent Western businessman in Beijing. "And then you have these economic decision-makers around him who find it very difficult to find time with him, to alert him and to stop this erosion in sentiment."

Mr Xi keeps railing against what he sees as "ideological infiltration" by the West, and talking up the need to make China's economy "self-reliant". The West's heightened resolve to counteract harmful behaviour by China abroad has stiffened his sinews. In response to America's chip war, his government is pumping money into Chinese companies to help them produce cutting-edge technology by themselves (see Business section).

What about the big exception to the trend of isolation, China's soaring trade flows, which reflect its continuing role as an industrial powerhouse? Even they tell a story. During Mr Xi's rule, the share of China's foreign trade with major rich-world economies has been falling. In recent years, trade with the ten-member Association of South-East Asian Nations and the other countries of BRICS—namely Brazil, Russia, India and South Africa—has grown more rapidly than its trade with Europe and America (see chart 4).

For Mr Xi, although America remains important, "south-south co-operation" is growing fast as a strategic and economic priority. What he means by this is the creation of an alternative centre of world power—one that pivots around China, with the West at a safe distance. China is stepping up efforts to woo countries of the "global south", as Mr Xi calls it, trying to secure them to China's orbit with implicit promises of economic gain in return for their acquiescence to China's worldview. China is opening a new door. This time it is setting the terms for those allowed to enter. ■

Hong Kong

Messy for Messi

Hong Kong is trying to restore its image as a global city

As China has struggled with reopening to the world, so too has Hong Kong. The former British colony has long branded itself "Asia's world city", a more international place than the mainland. But on top of the pandemic, a sweeping national-security law enacted in 2020 has crushed dissent and spooked foreigners. Some 34m tourists still visited last year, but that was only 57% of pre-pandemic numbers.

Hong Kong officials had hoped that holding some big events might help. To that end, they offered HK$16m ($2m) to help fund an exhibition football match featuring Lionel Messi, an Argentine superstar. Promoters plastered Mr Messi's face on billboards across the city. On February 4th Inter Miami, Mr Messi's club, played a local team in Hong Kong's biggest stadium. Nearly 40,000 people paid up to HK$4,880 to watch.

They were disappointed. Mr Messi (pictured) spent the match on the bench, apparently suffering from a groin strain. The crowd booed Inter Miami off the pitch. To make things worse, three days later Mr Messi played a game in Japan, China's long-time rival. The injury not only soured the football game; it also ignited a nationalist firestorm.

Regina Ip, a pro-mainland lawmaker in Hong Kong, said on social media that Mr Messi had made a "deliberate and calculated snub" to the city. She suggested that "black hands"—code for foreign plotters—were to blame. An editorial in the *Global Times*, a state-run tabloid, speculated that foreign powers were trying to undermine Hong Kong's economy. Mr Messi's account on Weibo, a social-media platform, was swamped by angry commenters.

Authorities in Beijing and Hangzhou then said that they would no longer host Argentina's national football team in two friendly matches scheduled for March. The decision was made "for the reasons everyone knows," according to officials in Hangzhou. Tatler Asia, the organiser of the match in Hong Kong, has pledged to return 50% of the price of the tickets.

All of this has made Hong Kong look worryingly like the mainland, where brands and celebrities are wary of offending thin-skinned nationalists. As well as the football, Hong Kongers have been talking about "Expats", an Amazon Prime show about wealthy foreigners living in the city. Officials had hoped it would be good for Hong Kong's image. In 2021 they even bent quarantine rules to allow Nicole Kidman, an Australian actress, to film on location. But some politicians have said the series portrays the city negatively. When it premiered on January 26th, Amazon did not make it available to viewers in the territory.

Undeterred, Hong Kong officials say they are planning dozens more "mega-events" to attract tourists. A new 50,000-seat stadium is set to open later this year. But in Hong Kong, as in mainland China, sports stars and other celebrities will need to tread more carefully.

Argie-bargie

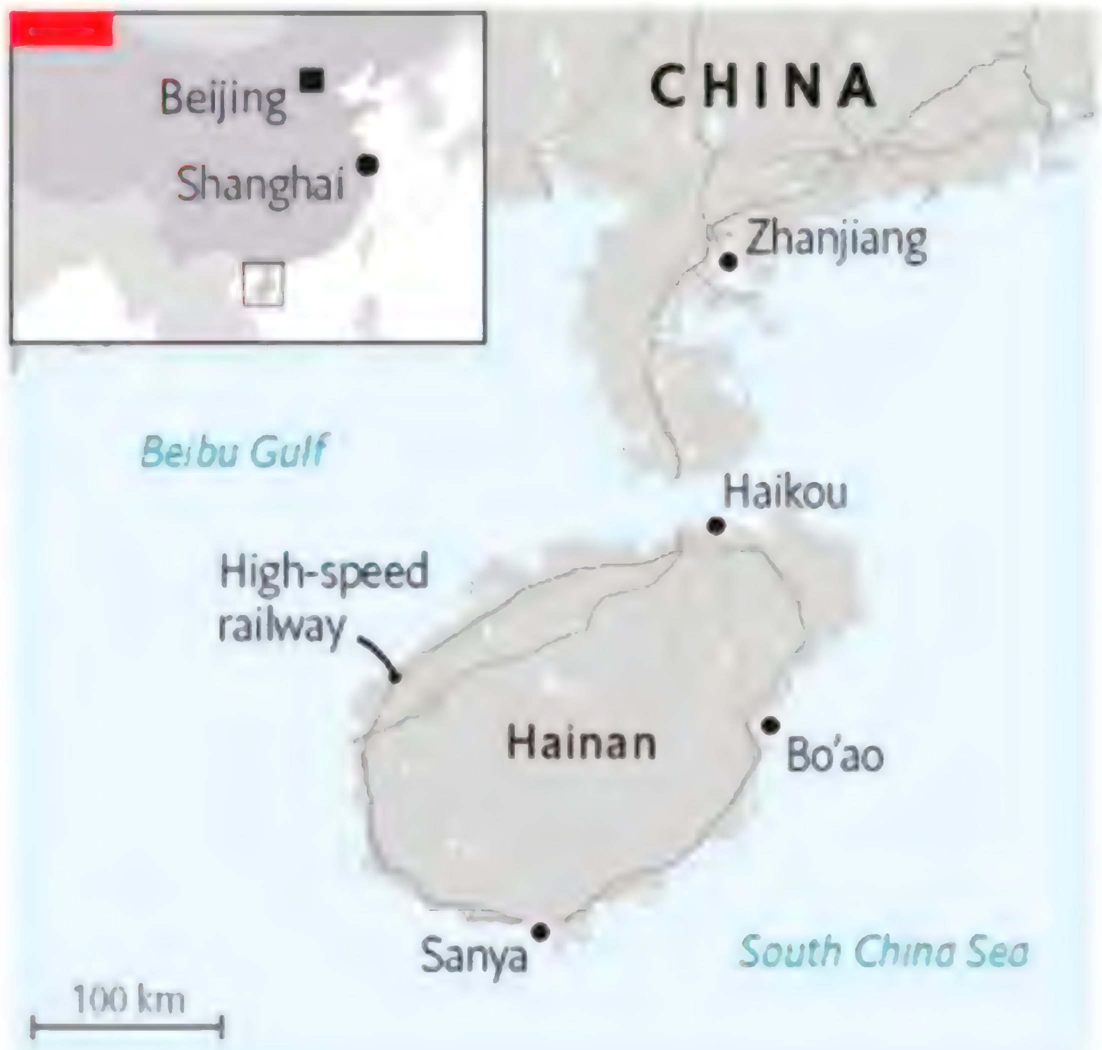
Holidays in Hainan

Life's a beach

SANYA

Party leaders are trying to boost domestic tourism

SURFING IS HARDER than Huang Shimin had expected. Alongside a bunch of other wet-suited novices, she is trying it out on the golden sands of Hainan, a tropical island roughly the size of Taiwan, off China's southernmost tip. The young professional from Shanghai is exactly the kind of high-spending tourist that China's government hopes will holiday within China now the pandemic is over. The lunar-new-year break, which began on February 10th, will be a test of the push to spur domestic consumption through tourism.



Hainan should be a model for this policy. When Xi Jinping, China's leader, visited in 2013, he urged locals to harness the "green mountains, clear waters, blue seas and azure skies" to build "an international tourism island". As in many peripheral areas where Mr Xi has bolstered the travel industry, including Tibet and Xinjiang, he also has a political agenda. China's vast size means that the central government's control is often weaker in these far-flung provinces. Hainan is strategically important, located on the South China Sea, where China has been militarising reclaimed islands. It is also home to a giant naval base, as well as space and satellite launch sites, and hosts the annual Bo'ao forum, a meeting of bigwigs often dubbed "Asia's Davos".

Mr Xi's directives have led to new airports, high-speed railways and giant expressways on the island. Chinese tourists have long been able to purchase items there duty-free. In 2020 their allowance was tripled to 100,000 yuan ($14,000), a direct appeal to affluent Chinese consumers accustomed to buying designer goods abroad. At first glance, these efforts appear to have been successful. In 2021, when domestic tourist numbers and revenues elsewhere in China nearly halved, visits to Hainan stayed close to 2019 levels. Covid gave the island province a boost: from 2020 to 2022, GDP per person rose faster than in the preceding ten years, when China's economy was growing more rapidly. Even after China lifted covid restrictions and unsealed its borders in 2023, Hainan attracted 90m visitors, more than any previous year.

The Chinese government is committed to serving high-spending shoppers in fancy hotels. And in 2022 a new 3m-square-foot duty-free mall, the world's largest, opened in Haikou, the island's capital. But as the domestic tourism market matures, says Yang Yang of Temple University in Philadelphia, many Chinese are looking for experiences beyond staying in posh hotels. The local government is now promoting inland hiking trails through its tropical forests. Music and film festivals are being staged to attract an artier crowd.

The most innovative new attraction is medical tourism. One 39-year-old man standing in the lobby of a swanky hospital is in Hainan for a faecal transplant, having heard about "experimental health vacations" on television. "Managing my health is like maintaining a car," he says of his choice to spend ten days at the facility. The government wants to attract thousands of tourists to giant new hospitals in Hope City, a purpose-built medical district near Bo'ao, where patients are offered everything from cosmetic surgery to stem-cell therapy. Hainan already has a large community of pensioners from elsewhere who spend winter on the island.

Yet the uptick of visitors in 2023 may be deceptive. International-flight volumes last year remained well below pre-pandemic levels. As a more normal level of international travel resumes, Hainan may struggle to attract China's wealthy travellers. International bookings are up for the lunar new year, particularly to Malaysia, Thailand and Singapore, where Chinese citizens do not need visas.

Faced with strong foreign competition, the island's current strategy risks looking outdated. Prices on Hainan are so high that many who go there could easily afford an international break. Other Chinese destinations now have duty-free outlets, and more people are buying domestic brands.

What is more, there is unlikely to be an increase of international tourists. Foreigners must use Chinese apps for payment, cope with an internet firewall that precludes roaming and navigate gridlocked cities where most signs are in Chinese.

The rewards of tourism are proving elusive for local people. Despite government transfers and crowds of tourists, Hainan is still one of China's poorest provinces. Only Ningxia, Qinghai and Tibet, in China's west, rank lower. Tourism is dominated by a small number of often foreign-owned hotels and outlets. Restaurant-owners and businesses in Sanya say they benefit little from tourist traffic even in high season. Many of the island's 9m residents are still poor farmers. Even with such high traffic during the pandemic, GDP per person fell, relative to other provinces, from 16th in 2019 to 21st in 2022. Hainan will need a lot more surfers to turn the tide. ■

Doing their bit for the domestic economy

Chaguan | Secret police on every street

How China stifles dissent without a KGB or Stasi of its own

MUCH THOUGHT has gone into making the Beijing Police Museum a family-friendly attraction. Housed in a classical mansion near Tiananmen Square, the museum is big on crime-fighting heroics. Glass cases show guns used by Chinese police. A model of a police dog sports a bullet-proof vest, commando-style helmet and protective boots on its paws. During the lunar-new-year holidays, a recent weekday found parents and children admiring displays about police helicopters, drug squads, traffic patrols and cyber-officers keeping the internet "healthy". Political repression earns a passing mention—but in a historical section. An old photograph shows student protesters being arrested by plain-clothes agents, decades before the Communist Party took power.

Finding that museum's opposite—a site that symbolises the dark side of the police state—would not be a straightforward task. China has no direct equivalent of the Soviet-era KGB, meaning a secret-police agency with armies of officers. There is nothing in Beijing like the KGB's Lubyanka building, a notorious city-centre prison whose name struck fear into Muscovite hearts. For all that, political protests against Communist Party rule are vanishingly rare. That is because the party has built the most capable surveillance state in history, argues "The Sentinel State: Surveillance and the Survival of Dictatorship in China", a new book by Minxin Pei.

China's system of "preventive repression" is designed to deter, detect and frustrate critics of one-party rule before they can organise or act, writes Mr Pei, of Claremont McKenna College in California. In part, that involves high-technology tools that have made headlines worldwide, from facial-recognition cameras and vehicle number-plate readers to mobile-phone tracking devices. Digital firewalls surround China's internet, and algorithms monitor messaging services and online comments. Cross an unseen red line, and police will soon be pounding on the door. For good measure, the book weighs the potential of a still unfinished "social-credit system" that assigns citizens scores for social and anti-social behaviour in their business and private lives.

Yet Mr Pei suggests that gadgets cannot explain China's success in suppressing dissent. That, he argues, is mostly explained by overlapping networks of thoroughly analogue human beings. Most of these are not full-time spooks. When the Berlin Wall fell in 1989, East Germany employed one Stasi officer for every 165 citizens. China would need 8.5m secret police to match that ratio, but actually employs a small fraction of that number. The Ministry of State Security, China's main civilian spy agency, handles overseas espionage and domestic counter-intelligence. MSS branches around the country watch foreigners, Chinese with overseas connections and ethnic minorities with cross-border ties or an international profile, including Tibetans and Uyghurs. State-security agents wield fearsome powers to intimidate and detain targets without charge. But the MSS is relatively small and has "limited purview with respect to domestic surveillance", notes the book.

A more significant secret-police agency lurks within the Ministry of Public Security, China's regular police service, Mr Pei writes. This force-within-a-force is known as the political-security protection unit (*zhengbao* for short). The total number of Chinese police officers is not made public, but is thought to be over 2m. Drawing on provincial, municipal and county yearbooks and publications, Mr Pei estimates that 3-5% of all police work for the *zhengbao* at the national and local level. That equates to 60,000-100,000 *zhengbao* officers, or one for every 14,000-23,000 citizens. They are complemented by the *wenbao*, a police unit that watches cultural and educational establishments, especially universities.

Another elite outfit is the Political and Legal Affairs Commission, a party body. It runs surveillance operations and "stability-maintenance offices" tasked with smothering strikes and protests before they start. A powerful agency, it oversees security policy generally, and vets police and legal officials for political reliability.

China does not need a secret-police agency with millions of officers, the book suggests. That is because its surveillance state rests on other pillars that offer part-time but invaluable help. The first is rank-and-file officers in neighbourhood police stations. In Chinese propaganda, there is nothing sinister about such police. They are hometown heroes who battle crime and keep the public safe. But tracking political dissent or public discontent is their job, too. The police oath mentions upholding "the absolute leadership of the Communist Party" before it talks of protecting the public.

The police work that is not shown to children

Police stations are required to monitor "key personnel", a formal term for millions of Chinese with police files, including ex-convicts and criminal suspects but also those deemed threats to "state security". Police stations also watch millions more "key individuals", a group that includes rights activists, religious believers and people petitioning the government for legal redress.

All of that involves a second pillar of the surveillance state: informants. Mr Pei quotes documents in which city governments and police districts boast of recruiting express couriers, shopkeepers, security guards, hotel clerks and building managers as informants. Xi'an, a western city, once reported one in 12 city taxi drivers working for police. Universities report that foreign faculty and Uyghur students are under close watch, thanks to students recruited to spy on teachers and classmates alike. Millions more party members and community volunteers are asked to report suspicious acts as well as colleagues and neighbours unhappy with the authorities. The system fights crime and defends the party's monopoly on power: no clear line separates these two tasks.

This complexity suits the party. It has eyes and ears everywhere, while avoiding a stand-alone Chinese KGB or Stasi that might alarm the public or grow too mighty to control. China's surveillance state, it turns out, is hiding in plain sight. ■

The next phase of the Gaza war

The looming hell in Rafah

JERUSALEM

Binyamin Netanyahu wants to attack now. His generals don't

As ceasefire talks bog down in the Middle East, the threat is building of a new and devastating level of violence. On February 14th Binyamin Netanyahu, Israel's prime minister, said he would not send a team to negotiate a truce in Gaza in exchange for the release of hostages by Hamas, citing the group's "delusional demands". Simultaneously fears have been rising for days of a massive Israeli army invasion of Rafah, Gaza's southernmost city that is hemmed along the border with Egypt, where 1m or more Palestinians are located. Any expansion of the fighting will probably have devastating consequences for civilians, detonate Israel's relationship with Egypt and exhaust American patience. Yet Mr Netanyahu is intent on escalating, insisting that it may be necessary in order to achieve "total victory".

Mr Netanyahu's emphasis on Rafah is in part an attempt to boost his standing by promising Israelis a decisive result in the war. On February 12th the embattled prime minister was given a fillip when commandos rescued two hostages from the Al-Shabura neighbourhood in Rafah (diversionary bombardments killed 74 Palestinians). "Only continued military pressure ...will bring about the relief of all our hostages," he said afterwards. Yet the focus on Rafah is not just about Mr Netanyahu's self-preservation. Within the Israeli security establishment there is an acknowledgment of the benefits of taking on Hamas there, in its last major stronghold, and of gaining control of the border with Egypt, the main channel for arms-smuggling.

In the assessment of security officials, Hamas is on the back foot. The movement's leader in Gaza, Yahya Sinwar, is the subject of a manhunt in Khan Younis, the largest city in southern Gaza. He is understood to be increasingly incapable of communicating with his men.

The group has been trying to re-establish its presence in Gaza city, in the north, by putting police on the streets and paying civil servants. Yet Israeli intelligence officials believe Hamas leaders worry they are losing control over the population. More than 10,000 Hamas members are believed to have been killed and thousands more wounded or captured. The Israel Defence Forces (IDF) says around 18 of Hamas's 24 battalions have been "dismantled". The remaining fighters are in "guerrilla mode" and are losing their ability to rule Gaza.

Trapped in the crossfire

Attacking Rafah would squeeze Hamas further, yet the toll could be huge. The generals know that there may be no effective way of moving civilians out of harm's way. In the previous stages of the war, Israel urged residents of Gaza city and Khan Younis to move south, away from the war zone. Now it would have to get those who had fled to Rafah to move again, this time to the shrinking "safe areas"—makeshift tent-cities on the coast (see map on next page).

Neighbouring Egypt is desperate to avoid the war spilling into its territory. It is refusing to allow many refugees to leave ▸▸

→ Also in this section

Gaza and has warned Israel a war in the border area could have "dire consequences". Egyptian officials have threatened to suspend a peace treaty signed with Israel in 1979 if desperate Palestinians surge into Egypt, according to the *Wall Street Journal*.

The prospect of high civilian casualties has Israel's allies anxious. On February 12th President Joe Biden said that "a major military operation in Rafah should not proceed without a credible plan for ensuring the safety and support of more than 1m people sheltering there". David Cameron, Britain's foreign secretary, also called for restraint. "It is impossible to see how you can fight a war amongst these people [in Rafah]," he said. "There's nowhere for them to go." In all nearly 29,000 people have been killed in the Gaza Strip since Hamas attacked Israel on October 7th.

Whether Israel now goes ahead and attacks Rafah depends on two factors. One is whether Mr Netanyahu can rally domestic momentum for a new front in the war. This is by no means assured. The operation he is touting would be large and include entire brigades that would probably remain there for weeks. The IDF has yet to start mustering troops for a manoeuvre of this scale. Instead the generals have been pulling troops out of Gaza and demobilising many of the 300,000 reservists called up on October 7th. Meanwhile the economic costs of the conflict are mounting. On February 9th Moody's, a credit-rating agency, downgraded Israel from A1 to A2. It warned that a prolonged war could "weaken executive and legislative institutions".

Mr Netanyahu's popularity continues to plummet in the polls, with his rival in the war cabinet, Benny Gantz, outstripping him both in personal ratings and in voting intentions. If elections were held now, Mr Gantz's centrist National Unity party would get more than twice the votes of Mr Netanyahu's Likud. Although Mr Netanyahu's predicament gives him an incentive to gamble on redemption by escalating in Rafah, the generals and the pragmatic wing of the war cabinet, led by Mr Gantz, prefer to pursue a deal to free more hostages. For them, Rafah can come later.

Sources: Institute for the Study of War and AEI's Critical Threats Project; OpenStreetMap

Whether such a deal might happen depends on the talks in Cairo resuming, and on Hamas. Israel has flatly rejected its demands for a full ceasefire and the permanent withdrawal of Israeli troops in Gaza before any exchange of hostages for Palestinian prisoners. Despite Israel withdrawing its negotiators from the talks, the Israeli assessment remains that Hamas's demand is just an opening gambit and that a deal can be reached on a temporary truce. Israeli officials believe that Hamas's need to regroup and provide the population with some desperately needed respite before the holy fasting month of Ramadan, which is expected to start on March 10th, could force it to show more flexibility on hostage negotiations. To avoid hell in Rafah, one side needs to blink first. ■

UNRWA

The case against it

DUBAI

The wayward definition of a refugee has perpetuated Palestinians' misery

NOTHING IS PERMANENT, but in the Holy Land some things come close. The UN Relief and Works Agency (UNRWA) was founded in 1949 to aid 700,000 Palestinian refugees displaced by the creation of Israel. Meant as a temporary fix, its mandate has been renewed every few years since. This year it will turn 75—if it survives that long.

Last month Israel alleged that 12 UNRWA employees took part in the October 7th massacre, in which Hamas militants murdered some 1,200 Israelis. It has also claimed, without publicly offering any evidence, that 10% of the agency's 13,000 employees in Gaza are members of Hamas. In early February the Israeli army took journalists on a tour of a tunnel beneath UNRWA's headquarters in Gaza, which it said housed Hamas military infrastructure.

Philippe Lazzarini, the agency's director, says he fired nine of the 12 employees named by Israel (two others were already dead). The agency denies any knowledge of the tunnel. But the charges had an immediate effect: some of UNRWA's biggest donors, including America and Germany, quickly suspended their funding.

Hamas has ruled Gaza as a one-party statelet since 2007. No one should be surprised if it has stuck its members on the UNRWA payroll or stashed weapons in UNRWA facilities. The UN acknowledges that both have happened before. Aid workers have had death threats for looking into such incidents. Almost by definition the job of providing aid in rough places requires dealing with bad actors: the alternative is not to do the job at all.

That seems exactly the point of the latest allegations. Some Israeli officials have wanted to shut down UNRWA for years, accusing the agency of helping to prolong the conflict. They have seized the moment to press their case. For its supporters, meanwhile, the agency is above reproach, a group of selfless humanitarians doing vital work. As ever, life is more complicated than a morality play. The continued existence of UNRWA is a problem—but not for the reasons its critics think.

Around the world, displaced people are the responsibility of the UN High Commissioner for Refugees (UNHCR). Only the 6m Palestinian refugees scattered across the Middle East have a separate dedicated caretaker. Before the war perhaps a few tens of thousands were refugees in the literal sense: people forced to flee a conflict. The rest are their descendants, by now three or four generations of them. Most Palestinian refugees, in other words, are not displaced.

This is the core of Israel's case against UNRWA: that its definition of "refugee" is too expansive, without parallel, and nurtures false hope that all Palestinians will return. Both parts of the argument are flawed. There are other long-running crises, such as Afghanistan, where UNHCR recognises children of refugees as refugees themselves. If the numbers are more lopsided in the case of Palestinians, it is because their displacement has gone on for so long. And it is ironic to hear Israelis argue that Palestinians only hold fast to their territorial claims because of the UN—when their own national project rests on a millennia-old attachment to the same land.

Yet it holds a grain of truth, too. The UNHCR does not only care for refugees. It also has a mandate to seek "durable solutions", such as integrating them into host countries that offer refugees citizenship. Yet UNRWA can only provide aid.

This is a problem—but not one of UNRWA's making. Blame instead the Arab states that have refused, for decades, to offer citizenship to the Palestinians in their midst. The 1.7m registered refugees in Gaza (or their ancestors) lived under Egyptian control for almost two decades until 1967. Instead of offering them rights, Egypt left them in squalor.

Syria insists that Palestinians enjoy the same rights as Syrians, except for citizenship and suffrage (not that the latter is very valuable). In practice, though, they face discrimination, such as a prohibition on owning farmland. The situation is far worse in Lebanon: Palestinians cannot own property, hold certain jobs or have access to many government services. Jordan is the exception, yet UNRWA continues to serve the 2m Palestinian refugees there—

even though most are also citizens of Jordan, which, in any other context, would mean they were no longer refugees.

Whether UNRWA can continue to provide those services is now in doubt. It relies on mostly Western donor countries. Of the $1.2bn UNRWA raised in 2022, 44% came from the EU and its members and 29% from America. The agency says it may cease operations by the end of February if donors do not resume their contributions.

Some diplomats think that warning is exaggerated. America, UNRWA's largest funder, had already sent $121m since October, about one-third of its usual annual contribution. It was due to send roughly $300,000 this month, which is now suspended, but did not expect to send more until the summer. Germany had no pending payments. The EU had planned to send €82m ($88m) by early March, which may be delayed. If donors do not relent soon, though, the agency would undoubtedly have to start paring down its operations. It would probably prioritise work in Gaza, where it is now keeping 2.2m people alive.

Before the war more than half of Gazan students, almost 300,000 children, attended UNRWA schools. Half of the population (1.2m people) relied on UNRWA for health care. A similar share received food aid. Aside from the Hamas government, UNRWA was the largest employer in Gaza, and its salaries were vital to the economy.

In many ways, UNRWA was the government. Hamas officials have all but admitted this in interviews over the past few months. They said Hamas's role was to build up its military capabilities, not to care for their people—they had do-gooders for that. Israel, too, relied on UNRWA to mitigate the consequences of the draconian blockade that it (along with Egypt) imposed on Gaza. Even today, as Israel tries to abolish UNRWA, it still relies on the agency to prevent mass starvation in Gaza.

On visits to the enclave over the past 15 years, your correspondent heard periodic criticisms of the agency from the very people it served. "Imagine that you have cancer," said one young man, himself a graduate of an UNRWA school, in 2022. "And your doctor has a cure, but instead he gives you painkillers." That was the role of UNRWA: to preserve the status quo.

Since 1949 that status quo has sometimes served the interests of regional powers. Arab countries could avoid caring for and integrating Palestinians. Israel could keep Gaza sealed off without worrying that it would implode. Hamas could be an absentee ruler, fobbing off the hard work of governance and providing services on someone else. Abolishing UNRWA would not kill the Palestinian cause. It would merely make clear that, for nearly 80 years, far too many governments have not cared about the well-being of Palestinians. ■

Yemen and foreign aid

Blackmail prevails

The Houthis care more for Palestinians than they do for their own

GAZA'S PALESTINIANS have had no friends as fervent as Yemen's Houthi rebels. While Arab leaders shed crocodile tears, one of the world's poorest countries fires ballistic missiles at Israel and targets vessels passing through Bab al-Mandab, a chokepoint for international trade. The Houthis' religious leader, Abdel-Malik al-Houthi, vows to continue the attacks until Israel stops bombing Gaza and lets in unfettered aid. The Houthis rejoice in encouragement from abroad. "Yemen, Yemen make us proud! Turn another ship around!" cry protesters in New York.

Few notice the Houthis' disdain for humanity at home. After a decade of war, the UN reckons that the humanitarian crisis in Yemen is one of the world's worst. Over half of its 33m people need aid to survive, many of them under Houthi control in the north-west. But across their realm the Houthis hinder aid flows. They insist that the UN uses the Houthis' own list of beneficiaries and lets the Houthis oversee distribution. They have barred access to international aid workers. They tax shipments, sell aid and charge customs fees at checkpoints. In sum, they treat the aid programme worth billions of dollars as a cash cow. "As in Gaza, the risk of famine is man-made," says a former UN official. "They use aid as a weapon."

For the past decade Yemen's economy has survived mainly through foreign aid.

The new humanitarians

After the Houthis seized the capital, Sana'a, in 2014 and triggered a war with Saudi Arabia, UN agencies poured billions into the country to avert famine. Yet the Houthis, who adhere to a Shia offshoot of Islam, generally treat foreign aid workers as if they are Western spies.

Since America and Britain began bombing military sites in Yemen in retaliation for Houthi attacks on shipping in the Red Sea, the Houthis have ordered American and British citizens to leave. Among those affected is the UN's newly appointed humanitarian co-ordinator for Yemen, Julien Harneis, a Briton. For now, most are in Aden, Yemen's largest southern city and the seat of its internationally recognised government. But rumours circulate that the Houthis will shut down any UN or aid agency that refuses to remove its American and British employees from Yemen.

Tension has been building for years. Since 2019 the Houthis have blocked a biometric system the UN wants to use to track where the aid has gone. Instead the Houthis insist that the UN and other aid agencies use a ration list that their own administration has drawn up. This list also serves as a register for taxes and perhaps for the military draft. Families that oppose the Houthis, refuse to pay up or do not send their children to the front have been struck off the ration list, the UN reported last year.

The UN is also impeded by Houthi checkpoints and Houthi-nominated contractors who oversee aid distribution. Aid workers need the Houthis' security people to approve every trip out of Sana'a, while female staff need a Houthi-approved male guardian to escort them. Yemen's third-largest city, Taiz, is under siege, its water supplies restricted. "We have simply no idea who's getting what in the north," says an aid worker.

Woe betide anyone who complains. Foreign staff can lose entry or exit permits. "Please, I'd rather not get into access issues for now," says one, waiting to return to Sana'a. "There could be repercussions." Some local staff have been detained. Three who work for the UN are in jail. An aid worker for Save the Children, a British-based charity, died in Houthi custody in October. "Nowhere else in the world does the UN tolerate this," says a former UN staffer. "But 20m could starve if we pull out."

The UN has sometimes sought to resist the Houthis' blackmail. In December the World Food Programme (WFP) suspended deliveries to all 9.5m recipients in Houthi areas. It is hard to know the impact of this, since access is so tricky. Trouble in the Red Sea has pushed up insurance premiums on shipping, increasing costs for the cash-strapped WFP, and may slow the supply of basics to Houthi-controlled ports. Alas, the hungrier the population becomes, the more it depends on the Houthis. ■

South African politics

The dangerous kingmaker

JOHANNESBURG

Julius Malema wants to seize land, banks and mines. He may swing the next election

AS CYRIL RAMAPHOSA, South Africa's president, delivered his annual state-of-the-nation speech on February 8th, he looked remarkably nonchalant for the leader of a country beset by power cuts, staggering unemployment and rising crime. He appeared to have been cheered by small pleasures. For the first time since taking office in 2018, he was able finish the address without the threat of interruption, heckling or the sight of pugilistic opposition members being removed by security.

This was because the main instigator of parliamentary disorder in recent years was not there. Julius Malema, the populist leader of the Economic Freedom Fighters (EFF), had been suspended from Parliament for the month of February, along with five other party officials, after storming the stage to demand Mr Ramaphosa's resignation while he was delivering his state-of-the-nation speech last year.

Mr Ramaphosa could be forgiven for thinking that South African politics is an awful lot simpler without Mr Malema and his distinctive red overalls. As things stand, however, the combative opposition leader may hold the key to Mr Ramaphosa's re-election later this year.

Post-apartheid South Africa is often lauded for its free and fair elections. But such is the dominance of the African National Congress (ANC)—the ruling party has never got less than 57% of the seats in the national assembly—that the results of those elections have always been foregone conclusions. Until now.

Polls consistently suggest that the ANC could dip below 50% of the vote in the national and provincial elections slated to take place between May and August. (The date will be announced before February 23rd.) The reason is plain: citizens contend with daily electricity blackouts, some of the world's highest crime rates and, recently, sharp increases in living costs. The ruling party's appeal has also been severely dented by corruption scandals that have implicated senior leaders, including Jacob Zuma, a former president.

The most comprehensive poll to date, released this month by Ipsos, a research firm, showed support for the ANC dropping lower than even the most pessimistic figure predicted by political analysts—to below 40%. In this scenario the only way the ANC could realistically remain in power would be by forming a coalition with one of the two main opposition parties: the Democratic Alliance (DA), which is currently the second-largest party in Parliament, or Mr Malema's EFF.

Of these options, ruling-party insiders consider the EFF one far more likely. "We are getting ready for Juju," sighs an ANC official, referring to Mr Malema by his nickname. He ought to know what he is in for. Mr Malema cut his teeth in the ruling party's youth league, where he was never far from controversy. As the league's president in 2010 he was charged with hate speech for singing the song that has become his trademark at rallies: "*Dubul' ibhunu*" ("Kill the Boer"). Mr Malema argues that the lyrics, which are from an old anthem of the struggle against apartheid, should not be taken as a literal call to kill Afrikaners. But his increasingly radical policies, coupled with his scathing criticism of Mr Zuma, were too much for the party's top brass, who suspended him in 2011.

In 2013 Mr Malema founded the EFF, which won 6% of the vote in 2014 and 11% in 2019. The recent Ipsos poll puts it at 19%, ahead of the DA's 17% (with 10% undecided). This is a remarkable testament to Mr Malema's skill as a politician, even as he has continued to be a magnet for scandal.

"Over a fairly short but nevertheless extraordinary political career he has become the quintessential political entrepreneur," says Micah Reddy, an investigative journalist who has reported extensively on corruption allegations that have dogged Mr Malema and his party. "He has artfully blended business and politics...and built up an impressive political fiefdom." Mr Malema has denied wrongdoing.

The apparent surge in support for the EFF suggests that disgruntled former ANC voters are struggling to find a home in the DA, a centre-right party that has seen an exodus of black leaders in recent years. Instead, the EFF's radical messaging is striking a wider chord.

"This is the weapon that will be used against the enemy of our revolution," Mr Malema declared on February 10th, brandishing the party's 265-page manifesto. The document is a wholehearted rejection of the rainbow nation that Nelson Mandela tried to forge. "The political changeover in 1994 did not bring true liberation," Mr Malema writes in the manifesto. "It was a bluff which continues to subject black people to economic and social apartheid."

Mr Malema proposes sweeping changes to the economy. These include land expropriation without compensation; the nationalisation of mines and banks, again without compensation; and the introduction of basic income grants for the unemployed. These are curious proposals, since everything the state already runs, such as Eskom, the power utility, is falling apart.

It is unclear how hard Mr Malema would push the ANC to adopt these ideas in a coalition. Where the EFF has been the junior partner in coalitions running cities, it seemed to care more about landing plum jobs than promoting its policies.

Mr Malema would no doubt want a senior cabinet post in return for joining a coalition. That would bring his divisive and disruptive politics into the heart of the government. Though that could keep Mr Ramaphosa in power, it would hardly be a recipe for economic or political stability. ■

African debt

Descending Kilimanjaro

ADDIS ABABA

After two years, African governments return to international bond markets

WILLIAM RUTO'S first 18 months as Kenya's president have been haunted by a single date: June 24th this year, when a $2bn sovereign bond is due to be repaid. His cash-strapped government has raised taxes and cut subsidies, as protests have rocked the streets. Now it has bought some respite, at a rather exorbitant price. On February 12th Kenya issued a new $1.5bn bond, maturing in 2031, at a yield of 10.4%. It will use the proceeds to buy back most of the debt owed in June, kicking the can seven years down the road.

Governments in sub-Saharan Africa are tentatively returning to international capital markets after a 21-month hiatus. Last year was the first since 2008 when no countries in the region sold a dollar bond, as high interest rates shut them out of the market. The freeze was broken in January when Ivory Coast borrowed $2.6bn at 8.5% and below. Benin then raised $750m at a similar rate. Those bond sales gave hope to other African governments; the high yield on Kenya's bond gives caution.

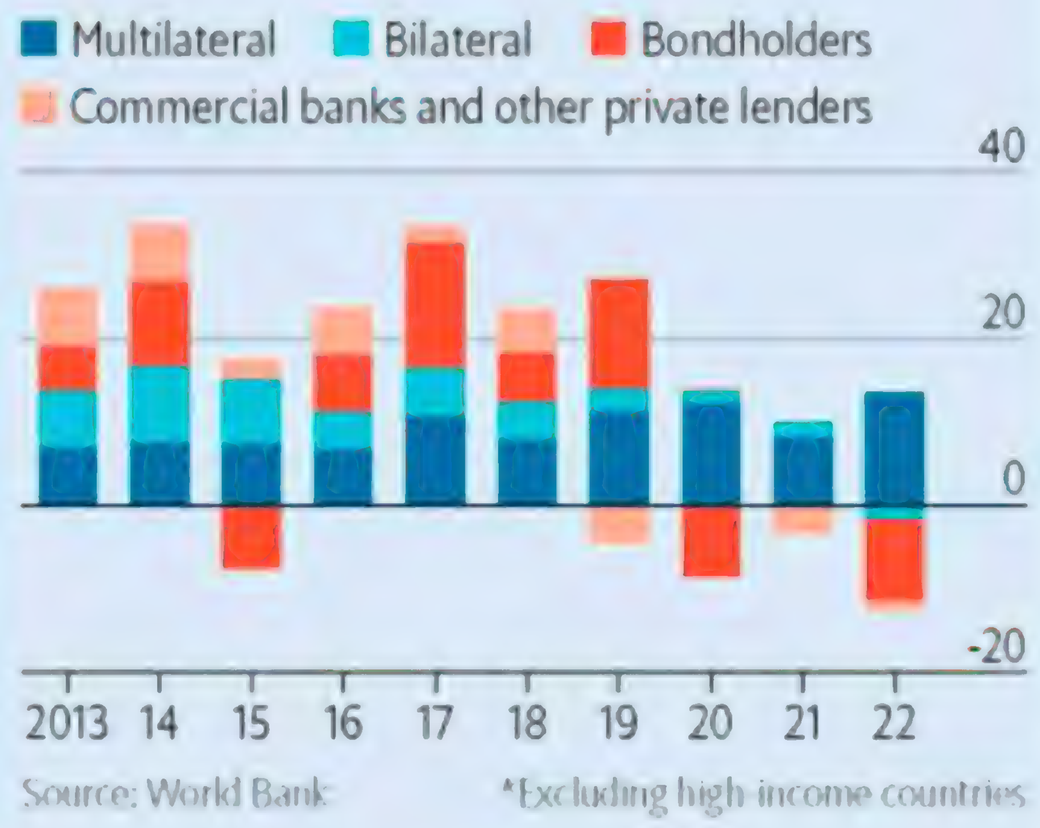
Africa's fortunes track the mood of the Federal Reserve. When America's central bank pumps cheap money into markets, as it did after the 2008 financial crisis, some trickles into Africa in search of higher returns. When the Fed has raised interest rates over the past two years, capital has flowed back the other way. In addition, the twin shocks of covid-19 and the Ukraine war caused investors to seek safety. China's lending to Africa has also fallen to its lowest level in two decades. The combined impact is clear in the flows of Africa's long-term external debt: by 2022 governments were paying back about as much as they were getting in new lending (see chart).

Investors are now returning to Africa because they expect the Fed to begin cutting rates later this year. The difference in yields between bonds issued by the American government and by African ones—an indication of the risk premium that investors demand—has shrunk by four percentage points from its recent peak. But the door has only opened a chink. Of 17 countries in sub-Saharan Africa that have outstanding foreign-currency bonds, around a dozen are still shut out of the market by double-digit yields, reckons Stuart Culverhouse of Tellimer, a research firm specialising in emerging markets.

For some countries it is already too late. A wall of bond repayments is falling due this year and next. Zambia, Ghana and Ethiopia have all defaulted and started protracted talks with their creditors. Kenya, which had flirted with the same fate, is willing to pay generously to borrow because it does not want to burn through its foreign-exchange reserves. The high yield suggests investors still consider it a risky bet, says Churchill Ogutu, an analyst in Nairobi at IC Group, an investment bank.

Easy come, easy go

Sub-Saharan Africa*, external public debt by creditor, net transfers, $bn



Source: World Bank *Excluding high-income countries

Until African governments find a way to generate more revenue and exports, they will always be vulnerable to the caprice of foreign investors. "Going back to the capital markets is just recycling the problem," argues Jason Braganza of the African Forum and Network on Debt and Development, an NGO based in Zimbabwe. The interest rate that African countries typically pay to borrow from private creditors is three times what they pay to other governments or multilateral banks. Many currently spend more on interest payments than on education or health.

Gregory Smith, the author of a book on African debt, compares the path of bond yields to a hiking trail. In the years after the financial crisis, African governments were in a green valley of low interest rates. Since the pandemic they have been gasping in the thin air on top of Mount Kilimanjaro. Now they find themselves on a lower plateau, where they can breathe a little easier. But it is still a long trek down. ■

Ukraine and Sudan

Foreign fields

There seems to be mounting evidence of Ukrainian forces in Sudan

THREE MEN kneel on the ground, topless and blindfolded. One of them is light-skinned. His interrogator, who is also white, addresses him in Russian. The group are part of "PMC Wagner", answers the prisoner, adding that about 100 Wagner mercenaries had entered Sudan from the Central African Republic.

On the interrogator's arm is an owl insignia, the mark of Ukraine's military intelligence, which is responsible for covert operations. According to the *Kyiv Post*, which published the video on February 5th, this is evidence that Ukrainian forces are fighting in Sudan's civil war. If so, it suggests Ukraine is widening the fight against Russia well beyond its own borders. It also highlights how Sudan's war is sucking in outsiders.

Videos purporting to show Ukrainians in Sudan have been circulating for months. Some appear to be of kamikaze drones striking buildings in Khartoum, the capital. Others allegedly show Ukrainian snipers or commandos conducting raids. The accumulating evidence, open-source investigators say, suggests that a small team of Ukrainian special forces is fighting on the side of the national army, the Sudanese Armed Forces (SAF). Some Western diplomats and sources close to the SAF agree. Ukraine and America neither confirm nor deny the allegations.

Ukraine may have several goals in Sudan. First, it appears to want to disrupt the flow of gold from facilities reportedly operated by Russia's Wagner mercenary group. Bullion from Sudan, Africa's third-largest producer, is believed to be one way Russia has mitigated Western financial sanctions. Wagner's local ally, a rebel paramilitary group known as the Rapid Support Forces (RSF), is the main player in the country's gold industry.

Second, Ukraine may have used Sudan as a transit stop to get weapons from other countries. Sudan itself may have also supplied munitions, though it seems unlikely to have sent much since civil war broke out last April. In September Ukraine's president, Volodymyr Zelensky, met Abdel Fattah al-Burhan, the head of the SAF, to discuss armed groups funded by Russia.

Last, targeting Russian forces anywhere in the world sends a message. "It would be the right thing to hunt down the mercenaries in Africa," says Alexander Khara of the Centre for Defence Strategies, a Kyiv-based think-tank. "To make them pay for the genocidal war in Ukraine." That may be so. But as the RSF continues its advance across much of Sudan, and the war threatens to spill over its borders, it is unclear whether Ukraine is achieving this.

EU recovery fund

How to spend it

The EU's covid-19 recovery fund has worked, but not as intended

February 19th will mark three years since the European Union's recovery fund came into force. Known in Brussels jargon as NextGenerationEU (NGEU), this multi-year budget worth €832bn ($897bn, or 5.2% of the bloc's GDP in 2022) is funded by EU debt, previously a rare commodity. It is the main political innovation to emerge from the pandemic in Europe. Some called it Europe's Hamiltonian moment, invoking Alexander Hamilton, America's first treasury secretary, who masterminded the fiscal federalisation of the United States. But the EU is some way from a fiscal federation. Northern finance ministers insist that the recovery fund was a one-off. And the extent of its success is still unclear.

Next week the European Commission will present its first external review. The funds are still being spent, so the economic effect is hard to measure. More curiously, experts cannot agree on what the fund's purpose was. But that is not surprising. Just as national fiscal policy does not serve a single purpose, neither does its equivalent at the EU level.

Start with its short-term purpose: to prevent a re-run of the euro crisis of 2010-12. In early 2020 the European Central Bank (ECB) had to intervene forcefully to stop interest rates on the enormous debt of Italy, which was hit hard by the pandemic, from spiralling out of control. To complement the ECB's actions, the EU agreed to pool fiscal means to help poorer countries and those hit hard by the pandemic. The amount of aid ranged from 10.8% of GDP for Italy to 0.6% for the Netherlands (see chart on next page). The markets learned that the ECB does "whatever it takes" to preserve the euro (as it promised during the euro crisis), and that in a crisis the EU's richer countries will help its poorer ones. On this count, the fund has been a success.

The fund's second purpose was to aid the recovery from the depths of the covid recession. That was never going to work. Fiscal stimulus should focus on consumption, not investment—think American-style stimulus checks, or tax cuts. EU spending, which happens only via national governments and focuses on investment, could not possibly come fast enough to help. It might have had a signalling effect that money would flow and that governments and investors could start planning, argues Zsolt Darvas of Bruegel, a Brussels-based think-tank. In the end economists were glad the money was spent slowly: otherwise it might have fuelled inflation last year. But as a recovery tool, the fund made little difference.

What about the green and digital transformation of the European economy? The biggest recipients got huge sums. (Richer countries got little, and will end up disproportionately paying off the debt.) Greece's reform-minded government had already set up a commission headed by Sir Christopher Pissarides, a Nobel economics laureate, to use the money to make big changes. Some of that is working. Plans to digitise public administration and deploy solar panels grew more ambitious. Oversight by the commission prevented the most egregious white elephants, such as Italy's proposal to build a football stadium. This per- ▸▸

formance-based approach may well be applied to most EU spending from now on.

Still, there are problems. The EU sponsored some waste: Italy's ludicrously generous subsidies for green renovation of houses was co-funded by €14bn of EU money. Investments such as child-care facilities need permanent staffing; the NGEU is a one-off, so that funding is unsure. Since most of the money has yet to be spent, the final verdict will have to wait. But so far the results have been mixed. "It was too much money for Italy, and there was too little time to make sure it is spent well," argues Tito Boeri of Bocconi University.

The cash was also meant to help countries implement politically difficult reforms to boost growth. This shows more promise. Greece's government intends to reorder responsibilities of various levels of government, the health system and spatial planning. In Italy the government started reforming its byzantine judicial system. The money is an incentive to stick to agreed reforms, especially important in a country that changes governments frequently. But Italy has struggled to boost the level of competition in its economy. Other efforts, such as Spain's labour-law reforms, have been less ambitious. The real test will be whether the EU insists that countries stick to their promises.

The final purpose of the NGEU was to bribe the EU's outcasts, countries run by the populist hard right. The smell of billions in fresh cash from Brussels led Poland and Hungary to agree reluctantly to new powers for the European Commission, to monitor whether breaches of the rule of law threaten the union's financial interests. Both countries must pass certain "super milestones" to get any funds. (The EU's decision in December to unfreeze €10bn for Hungary was unrelated to these new monitoring mechanisms.)

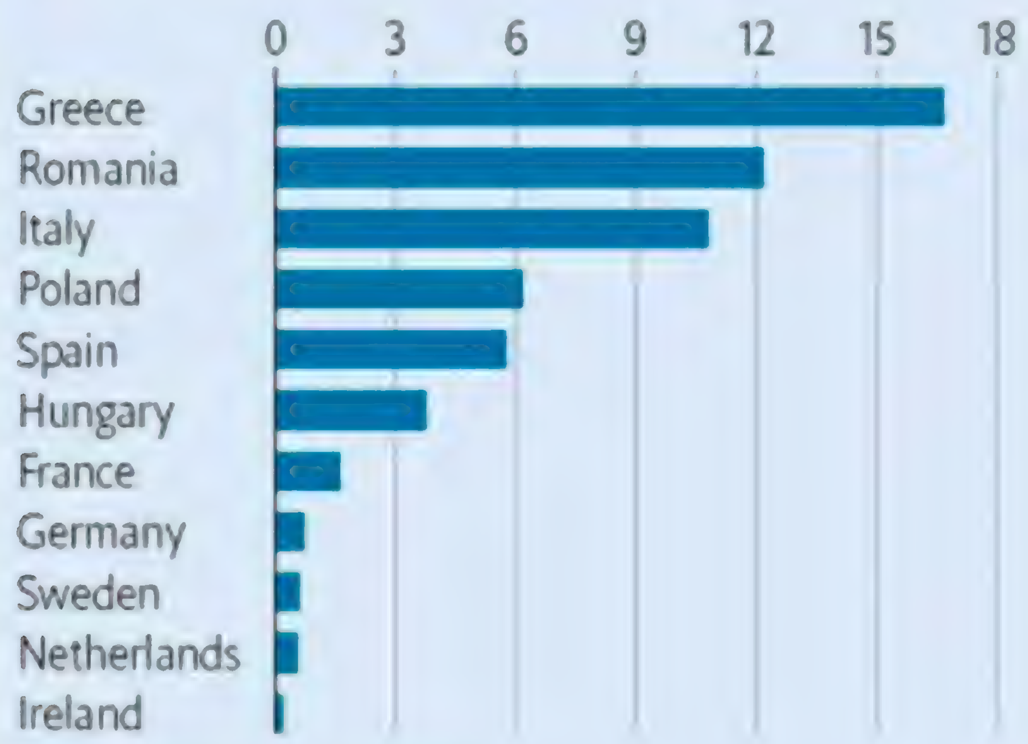
Critics argue that the milestones are superficial: in Hungary they cannot repair the damage to democracy; in Poland a new government is taking on that job itself. But for the first time, the EU has financial leverage to discourage countries from violating the rule of law. At the least, it can stop its funds from adding to autocratic governments' power.

The overall verdict, then, is cautiously positive. Some want more such schemes. "Whatever the issue in the EU these days, NGEU is the answer," quips Mujtaba Rahman of Eurasia Group, a consultancy. European federalists hope collective debt, in the words of Hamilton, "will be to us a national blessing; it will be powerful cement of our union." But another Hamilton provides better guidance. A Hamiltonian cycle in mathematics is a line that, after visiting all nodes once, returns to its origin. This is where the recovery fund will end up, too. Having spent €832bn in 27 member states, the EU will have to make the case for a larger budget and more authority anew. ■

Aid to the needy

EU recovery fund, grant allocation

Selected countries, 2020-26, % of 2021 GDP



Source: European Commission

Bessarabia

Going full Ukrainian

IZMAIL

A partly pro-Russian region changes its tune

WHEN RUSSIA first attacked Ukraine in 2014, less than half of the inhabitants of Bessarabia identified as Ukrainian. The region was poor and, for historical and economic reasons, many people thought that Vladimir Putin might be their saviour. But Russia's endeavours to stir up trouble in this strategic Ukrainian borderland have failed. Ukrainian forces beat back Russian attempts to land commandos at the beginning of the full-scale invasion in 2022, and security services arrested dozens of agents. The Russians damaged one of the two bridges linking Bessarabia to the rest of the country, but failed to shut down the other.

In just over 200 years the ownership of Bessarabia has changed nine times. It is bounded by the Danube and Dniester rivers, the Black Sea to the south and Moldova to the north. Seized from the Ottomans by Russia in the early 19th century, it became Romanian between the world wars and part of Soviet Ukraine after that. Apart from Ukrainians its people include Russians, Moldovans, Gagauz, Bulgarians and Albanians; their lingua franca is Russian rather than Ukrainian.

Oleh Kiper, the governor of the Odessa region, which includes Bessarabia, says that pro-Russian sentiment there dwindled after 2014 and "crashed" after February 2022; "Russian satellite TV propaganda" has been blocked since 2015. Since then Bessarabia has been not only peaceful, but a crucial lifeline for Ukraine. Hundreds of lorries thunder through it daily, loaded with grain and other goods. They carry vital currency-earning exports to the Danube-river ports of Izmail and Reni, or into Romania and onwards.

A decade ago the main road across Bessarabia from Odessa was awful, and Izmail felt like the dingy end of the world. No longer. The road has been improved and a ferry service opened in 2020, linking the region to Romania. On the Danube in Izmail a Togolese-flagged grain ship rests at anchor; hardy old men do squats on the riverbank nearby before swimming in the river. Others prefer a dip in Izmail's smart new municipal sport centre.

In the past few years wineries and tourism have flourished, though the post-Soviet recovery has been patchy. In Izmail money has poured in from up to 8,000 sailors who call this port home. Most of those who were at sea when the war started have stayed abroad. Although it has been hit by Russian rockets, Izmail has had a good war. Businesses and refugees from now-closed Black Sea ports like Kherson and Mykolaiv have moved here. "People got a sense of pride in being Ukrainian," says Andriy Abramchenko, the mayor.

In the predominantly Moldovan village of Hlyboke, history comes alive at the cemetery. The village lies on the banks of Sasyk, a lagoon that suffers from a disastrous Soviet attempt to turn it into a freshwater lake. The water is rising and the shoreline is eroding. The bones of Cossacks buried here in the 18th century jut out of the graveyard's sandy cliff edge. At the other end of the cemetery lies Sasha Gorun, the school's history teacher, who died fighting the Russians last May. Maria Chekir, aged 80, who taught Mr Gorun when she was the headmistress of the school, says she knows no one in the village who supports Russia. Now, says Mrs Chekir, "when I hear people speaking Russian I tell them off. Our guys are fighting Russians and I don't want to speak Russian any more."

Hanna Shelest, a security analyst in Odessa, is not surprised. The war in Donbas, in the east, destroyed any local faith in the Kremlin's propaganda about a peaceful "Russian World". Meanwhile, the government in Kyiv began paying attention to the region. Ten years ago farmers here sold their cabbages to Russia, and blamed Ukraine's government when war killed that business. Now they have found other markets, and resentment has dissipated.

Although the fear of separatism has evaporated, the threat from corruption has not. Ivan Rusev, an environmental researcher and activist, says that the army has sealed off parts of Bessarabia's national parks. Inside, he says, people with connections are grabbing land for farming or hunting. Asked about Mr Rusev's allegations, Mr Kiper, the governor, said simply: "Thank you for informing me." ■

NATO

Bunkering down

Concrete solutions

Europe fortifies itself for a Trump presidency

THE SPECTRE of Donald Trump returned rudely to Europe on February 10th, when the former president told a campaign rally that he would encourage Russia to attack NATO allies who did not meet the alliance's target of spending 2% of GDP on defence. Mr Trump's message jangled already frayed nerves: in recent weeks, a succession of European defence ministers and spy chiefs have warned that war with Russia is more likely and closer than assumed in the past. "It cannot be ruled out that within a three- to five-year period, Russia will test Article 5 and NATO's solidarity," warned Troels Lund Poulsen, Denmark's defence minister, on February 9th. "That was not NATO's assessment in 2023. This is new information that is coming to the fore now," he explained.

Some countries are acting accordingly. In January the defence ministers of Estonia, Latvia and Lithuania announced that they would build a string of "anti-mobility defensive installations" along their border with Russia and Belarus, collectively known as the Baltic Defence Line. "We have...studied the Russian war in Ukraine," adds Lieutenant Colonel Kaido Tiitus, a commander in the volunteer Estonian Defence League. "Our main lesson is that we need to find a way to stop the advance of Russian armoured units."

Ukraine's counter-offensive last year was stymied by the so-called Surovikin line: a sprawling array of Russian minefields, trenches, anti-tank obstacles and old-fashioned barbed wire, among other impediments. As Ukrainian forces slowed down to clear mines, bridge ditches and bulldoze obstacles, they were observed by drones and hit with a hail of anti-tank missiles and suicide drones. So uncharted was this territory that Valery Zaluzhny, then Ukraine's top general, asked his staff to dig out "Breaching Fortified Defence Lines", a book by a Soviet major-general. It was published in 1941.

Estonian officials estimate their stretch of the border will need some 600 concrete bunkers, each capable of holding around ten soldiers and taking a hit from a large shell. Prototype bunkers are being developed and construction is expected to start next year, at a cost of around €60m ($65m). The aim is not to create an impregnable fortress but to slow invaders, wear them down and buy time to bring up reinforcements. If Latvia and Lithuania were to build bunkers at a similar density, they would need 1,116 and 2,758 bunkers respectively, calculates Lukas Milevski of Leiden University in the Netherlands.

The catch is not military engineering but democratic consent. "The most important part is agreement with landowners," says Susan Lillevali, an Estonian defence official, noting that most of the borderlands are privately owned. She says there has been little sign of pushback from Russian-speaking minorities in the area. Locals may be reassured by the fact that the armed forces do not plan to store explosives near the strongholds in peacetime, nor install anti-personnel landmines, which are illegal under the Ottawa Treaty.

The Baltic bunker-building spree is part of a wider revival of interest in fortification. In November Volodymyr Zelensky, Ukraine's president, urged his commanders to accelerate the construction of defences in the east. Poland, too, is building up fortifications and shelters along its borders with Russia and Belarus, an ally of the Kremlin. This throws up a dilemma.

NATO armies have long preferred a more elastic defence in depth, in which forces retreat as needed and destroy the enemy on more favourable terrain. That is incompatible with defending every inch of NATO soil. But with an "operationally static defence", observes Mr Milevski, "it's much more of an imperative to ensure that the blow, when it comes, is as weak as possible." That puts a greater emphasis on using heavy firepower to strike deep behind Russian lines to break up the attacking force. In short: heavy bombardment of Russian soil. "Western political leaders," he warns, "may be squeamish about such attacks." ■

Germany's Ruhr

Back from the slagheap

DORTMUND

The hopeful resilience of Germany's industrial heartland

GERMANY IS wilting. Last year its economy shrank by 0.3%, the worst result in the G7 group of rich countries. Deutsche Bank, the country's biggest, reckons industrial output has sunk by 9% since 2018 and will fall another 2.5% this year. The talk in boardrooms is of creeping de-industrialisation as high domestic costs—especially for energy—push firms to relocate.

For a vision of the future look to Germany's former industrial heartland, the Ruhrgebiet, or more simply the Ruhr. Once home to Europe's biggest coal mine, its biggest steel mill and munitions plants that supplied two world wars, the English-county-sized region has been hollowed ▸▸

out. Two-thirds of its workers toiled in industry in the 1960s. Under one in five now do, as in the rest of Germany. On maps that show where factories cluster in Europe, the region pales against booming locales such as western Romania and southern Poland.

Focus more closely, however, and this vision of Germany's future looks a lot less dim. American rust-belt cities such as Pittsburgh shrank by half or more after the 1960s; the Ruhr's population fell by barely 10%. Its workforce has actually grown. With 5.1m people in a cluster of some 50 towns, it contains Germany's biggest conurbation. The Ruhr has long since scrubbed its air and rivers, tidied slag heaps into forested hills and converted hulking factories into quirky museums. Huge investments in higher education (the region hosts 260,000 university students) have made it a centre for R&D. A prime location and dense transport infrastructure have lured logistics firms, now the region's top private employer. The Ruhr is, in short, a much nicer place to live than the chimney-studded powerhouse of old.

There are outliers, of course. The region's southern half, with the big cities of Dortmund, Duisburg and Essen, has prospered while the more coal-dependent north has stalled. "There is huge segregation," says Thomas Bauer of RWI-Essen, an economic research institute. "Everything north of the A40 autobahn is still problematic." The mid-sized town of Gelsenkirchen, for instance, has suffered chronic unemployment since the last mines shut in 2018. The jobless rate in 2023 was 14.6%, nearly three times the rest of Germany's.

Mostly, though, the Ruhr has rebounded strongly. In its biggest city, Dortmund, the jobless rate touched 20% in 2005 after the closure of the Hoesch steelworks that once employed one in five of the town's workers. More people now work on its abandoned factory sites than before they closed. A mill for specialised steels occupies just a corner of one vast suburban site, dwarfed by a giant logistics park next door, which is linked to rail, canal and road junctions. Another site has become a sparkling campus for corporate offices, with a derelict turbine hall converted into a venue for high-tech light spectacles. Once a slurry pit, a huge artificial lake is now ringed with fancy apartments and offices.

Arturo de la Vega of the city's planning department is ebullient. "Our plan is for growth," he enthuses. With its population projected to reach 625,000 in 2035 (up from 601,000 now), Dortmund is building new schools and a children's museum. Having learned from the Hoesch collapse, it has focused not on winning big-name firms but on diversifying its economy and nurturing innovation. "Most companies here are less than 20 years old, and most you've never heard of," says Mr de la Vega. This "centipede strategy" has paid off. Not only has the local economy weathered recent shocks, the city's coffers are full. Its latest project is a new startup campus to revive a canalside district.

The funding is key, because sustaining the Ruhr has required lots of public money over a long period of time. Perhaps too much, thinks Christoph Schmidt, the president of RWI-Essen. A bit more "creative destruction" might have made the Ruhr adapt faster, he suggests. Some interventions have flopped. Gelsenkirchen's prospects as a hub for solar power ended when subsidies dried up, and cheaper Chinese panels flooded in.

A new push envisages the Ruhr as a testing ground for Germany's ambitious plans to replace hydrocarbons with clean hydrogen. Christoph Noeres of Thyssenkrupp Nucera, a recent spin-off of the Duisburg-based steel giant that designs electrolysers to produce hydrogen, is optimistic. Typical of today's Ruhr, his firm no longer makes things; the 500 workers at its Dortmund headquarters design and market complex processes that rely on equally complex supply chains. "Of course some operations may transfer outside of Germany," he says. "But here we are used to transformations and innovation. It is in our DNA." ■

Italian farming

Overcooked controversy

ROME

A ban on cultured meat is mostly bull

For its detractors, it is an abomination—"Franken-meat". For its advocates, meat grown from animal cells (known as lab-grown, cultured or cultivated) promises to help save the planet. It could slash the water consumption and greenhouse-gas emissions of the livestock industry (around 12% of the global total). Even if lab-grown meat merely replaced the stuff currently fed to pets, it would reduce the need to kill other animals. But it might pose an existential risk to livestock farmers, who are already protesting vigorously in Europe at rising costs, environmental restrictions and mounting paperwork.

In the EU, the controversy over cultured meat is searing. The European Commission is considering whether a ban introduced by Italy's conservative government breaches the rules of the internal market. Since the ban was imposed last November, 11 other countries have lined up to defend "real" meat. A note from the Italian, French and Austrian delegations to the agriculture and fisheries council on January 23rd claimed the lab-grown variety threatens the "very heart of the European farming model". They managed to corral eight other delegations in support.

Italy's initiative was sponsored by the agriculture minister in Giorgia Meloni's government, Francesco Lollobrigida. The bill imposing the ban includes beefy fines of up to €150,000 ($161,000) for defying it. It states that its aim is "safeguarding human health" and "preserving [Italy's] food and agricultural heritage". Yet no food-safety concerns have so far been raised concerning cultured meat. Any commercial product would need clearance from the European Food Safety Authority before it could be marketed.

More to the point, the fledgling lab-grown meat industry is still a very long way from producing wholly cultured products in commercial quantities at competitive prices. The first lab-grown hamburger, sampled in 2013, cost more than $300,000 to create. Companies working in the area have since faced immense problems in scaling up production and scaling down costs. Of late, many have switched to creating hybrid foodstuffs in which small amounts of cultivated meat have been added to plant-based protein. Already, hybrid products are available in small quantities in Singapore, Israel and America.

Josh Tetrick, the CEO of Eat Just, one of the leading American startups, said this month he was taking a 50-year view of the industry's prospects. New discoveries might change that. But until they do, the only effect of Italy's ban will be to enable Mr Lollobrigida to bellow that he has defended his country's livestock farmers. And the controversy in the EU will remain a storm in a Petri dish. ■

Charlemagne | The great scramble begins

How not to botch the upcoming EU leadership reshuffle

Featuring on a criminal "wanted" list usually crimps one's options for future employment. But when the country issuing the notice is Russia and the alleged outlaw is the prime minister of neighbouring Estonia, it can be a useful CV-enhancer. Reports that Kaja Kallas is one of a slew of Baltic politicians the Kremlin wants arrested—something to do with removing Soviet war memorials—may help her candidacy in the upcoming scramble for top EU jobs. The hawkish prime minister is among those who fancy their chances of trading up from a national post to a continental one, after the European Parliament elections from June 6th-9th. The process of replacing the bloc's top officials usually entails a lot of undignified squabbling. A bit of planning would reduce the angst and avoid divisions, at a time when Europe can ill afford them.

Who gets which top Euro-job is traditionally decided by the EU's 27 national leaders, who huddle in what might once have been a smoke-filled room a few weeks after votes are cast. In 2019 the process took two summits over five days. This time the jockeying for position is already under way. On February 19th Ursula von der Leyen, president of the European Commission, is expected to gain the formal endorsement of the Christian Democratic Union (CDU), the centre-right party of her native Germany, to serve a second five-year term atop the EU's powerful executive arm. Having made a decent fist of running the bloc's most important institution through covid-19 and the war in Ukraine, she is positioning herself as a safe pair of hands in a potentially unsafe Trumpian world. Assuming the centre-right comes top in European elections, as expected, few will dare challenge her. Once nominated by leaders she must be approved by a new set of European parliamentarians. A surge of support for the hard right means the centrist majority available to her is narrow. But it should be manageable.

The presidency of the European Council will prove harder to fill. Luckily it is less important. In theory the position entails chairing meetings of EU leaders, where the biggest decisions are made (as long as Viktor Orban, Hungary's cantankerous prime minister, does not hijack proceedings). But the incumbent, Charles Michel, has embraced the job's sideline as a ceremonial representative of the union, schmoozing the Xi Jinpings and Narendra Modis of the world. That has led to pointless turf battles between Mr Michel and Mrs von der Leyen, which have at times made the EU look as disorganised as a student society. Mercifully, term limits prohibit Mr Michel from staying on.

Convention dictates the council job be bestowed on a sitting EU leader, or a recently retired one. The need for political balance suggests it must go to the centre-left, which will probably come second at the polls. A southern European would be ideal to achieve geographic balance. António Costa, who as Portugal's Socialist prime minister fits the bill, was considered a shoo-in until he was forced to resign in a corruption scandal last November (he will be replaced after elections next month). Should the current judicial probe comprehensively clear him, he might still have a shot, if only because there are few other qualified lefties now running EU countries. One is Mette Frederiksen of Denmark, but her migrant-bashing stance has alienated political allies. The council's presidency is too small for the German chancellor, Olaf Scholz. It could suit the Spanish prime minister, Pedro Sánchez, who narrowly won re-election last year. But his leaving for Brussels might leave Spain mired in political chaos, undermining him in his new role. If none of those options appeals, lots of retired Italian prime ministers might be willing to do the job. The most talented, Mario Draghi, is probably a non-starter, given his insufficient leftiness and his age—at 76 he would be young only by American standards.

The third weighty EU job is the high representative, in effect the bloc's foreign minister. It is currently held by Josep Borrell, an affable Spaniard who candidly admits that concocting a joint foreign policy at EU level is all but impossible. Nonetheless many are keen to try. Central and eastern Europeans will fume if they are not given the post, having warned of Russia's warmongering intent long before it was fashionable (and not having held a top EU post since 2019). They might be assuaged if a Balt or a Pole were to be appointed as secretary-general of NATO. The military alliance's head is usually drawn from Europe and its current leader, Jens Stoltenberg, is on his fourth extension. But Mark Rutte, the outgoing Dutch prime minister, seems to be heavily favoured for NATO. Ms Kallas, as an easterner from a liberal party (the third big political family whose support Mrs von der Leyen will need) ticks many boxes. But others may yet emerge.

Holding the Leyen

Europe must avoid three pitfalls to ensure things go smoothly. First, it should rally around Mrs von der Leyen quickly, to remove any doubt she will continue to head the commission. Whatever errors she has made—some say her current support for Israel's ferocious assault on Gaza is excessively keen—are largely overshadowed by her record. Second, Brussels must avoid being drawn into the pointless constitutional bickering that recurs each time the top jobs are refreshed, as Euro-federalist types see an opportunity for the European Parliament to leach more power away from member states. Finally, Europe would do well to pick a self-effacing president for the council, one eager to broker compromises and work smoothly with the commission.

Even if the top-jobs process goes smoothly, there will be opportunity for strife later on. A new team of commissioners will have to be appointed once their boss is in place. It is not just personnel that must be selected: their roles often change too. (Is it time for a European defence commissioner, for example?) Key issues such as the level of the EU's green ambitions or its approach to free trade will be decided in part by who gets what position. That makes it all the more important to start by getting the biggest ones right. ■

HS2

Horror story

THE ROUTE OF HS2

How a flagship project became a parable of Britain's problems

"IT'S NOT ideal," says James Richardson, a tunnelling engineer at Old Oak Common station in west London. He is standing in a vast hole: almost a kilometre long, 70 metres wide, 20 metres deep. Some 2,000 people are working at the site: by the early 2030s Old Oak Common should be one of the largest stations in Europe, with six underground platforms for high-speed trains whizzing in and out of London. But Mr Richardson isn't sure where to dig next.

Last October the prime minister, Rishi Sunak, decided to amputate High Speed 2 (HS2), a railway project turned national trauma. He announced that the northern leg of the line would not extend beyond Birmingham to Manchester. Mr Sunak said that the London terminus for HS2 would still be Euston, some 10km east of Old Oak Common, but that private investors would have to pay for the tunnel connecting the two. That money is far from certain to materialise, which is why Mr Richardson's team is soon to bury two giant tunnel-boring machines (TBMs) at Old Oak Common. They will be entombed there, pointing eastward, until things become clear.

Proponents of HS2 dreamed of a railway to rival those in Japan and France, linking Britain's big cities in a feat of engineering worthy of the country's Victorian pioneers. Instead the project has shown that Britain cannot build. The rump line from London to Birmingham will be one of the most expensive in the world, costing up to £67bn ($84bn) or £300m per km of track. It will also be one of the most pointless. A totemic project to boost the north will end up mostly benefiting London. A huge investment to increase capacity and cut journey times will, for some routes, do the reverse.

What went wrong? It is tempting to say everything. But several problems stand out. The initial plan was far too optimistic, not least because ministers kept changing it; legislation ensured that costs ratcheted up; and the company in charge botched important decisions. To see how the project went awry, step aboard for a journey along the line (see map on next page).

Begin in London, where in March 2010 the then Labour government announced plans for a 540km (335-mile) Y-shaped railway linking Euston to Birmingham, with an eastern branch to Nottingham, Leeds and Yorkshire and a western branch to Manchester and the north-west. The trains zipping along the route would be among the fastest in the world.

Even at the outset, the economics were debatable. Passenger demand was growing and the existing lines were creaking. But Britain is smaller than France or Japan. Its large cities are closer together; they were already connected by rail. The initial budget was also hopelessly optimistic.

At Euston, for example, the idea was to squeeze 11 platforms into a small triangular plot between the existing station and a warren of residential streets. Immediately there were problems. When archeologists began to exhume 45,000 skeletons from a graveyard next to the station, they discovered an infestation of Japanese knotweed. Experts had to be drafted in to separate old bones from invasive perennial.

That was just the start. The work at Euston was supposed to cost just £3.2bn (all figures are in today's prices). The budget almost doubled even as the number of plat-

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forms was cut to ten and then six. Euston was a portent of wider issues. In 2010 the government had said that the whole line could be completed for £57.2bn. The Conservatives were happy to go along with that, but the numbers were flimsy.

Budgets are much harder to stick to when politicians fiddle. "If there is one thing with megaprojects, it's don't make changes after you've started," says Professor Bent Flyvbjerg of the Saïd Business School at Oxford University. Yet that is exactly what successive prime ministers and transport secretaries have done.

Tunnelling between Euston and Old Oak Common has started and stopped before now; plans changed so often that in 2020 £120m of design work for Euston had to be scrapped. The eastern arm of the Y to Leeds was severed in 2021. Another spur went in 2022. In early 2023 the Euston site was mothballed. Then came Mr Sunak's decision. Contractors call this "political risk", and Britain pays a premium.

Changes did not just come from ministers. Continue 50km along the line, a journey of around ten minutes when trains finally start running, and stop at South Heath, a village in the Chilterns in Buckinghamshire. These are the hills the project died on. For almost three years two TBMs, Florence and Cecilia, have been chomping through the chalky earth beneath the Chilterns, lining parallel 16km-long tunnels as they go with precast concrete segments. They have cost around £750m to dig before a track has been laid.

As well as those in the Chilterns, five "green tunnels", some almost 3km long, will protect residents' views and "connect wildlife habitats". Almost a quarter of the journey from London to Birmingham will happen underground. Another third of the journey will be through cuttings, where high banks line the tracks. In a 45-minute journey passengers will have "meaningful" views for less than ten minutes.

Ensuring hedgehogs can get around is a fine goal. The tunnels through the Chilterns were extended after a vociferous local campaign. But tunnels cost about ten times as much as normal tracks; cuttings five times. A big part of HS2's budget has gone on making sure a small group of people in the south of England will never have to see or hear it. As a result many more in the north won't either.

That points to another problem with the project: the way Parliament legislated for it. The bill in 2017 which gave HS2 Ltd, a public body, the power to acquire land detailed so many specifications that it ran to 50,000 pages. Critically, it gave councils the power to petition for design changes and to hold up work if they were unhappy. Having asked for tunnels, for example, councils then tried to stop them by denying access routes for lorries.

Source: Department for Transport

One case brought by Buckinghamshire council ran for nine months before the High Court threw it out. The council could be litigious partly because it had 15 dedicated planning officers paid for by HS2. Keep on for another 170km and, just before Lichfield, look out of the window to admire the Whittington Heath Golf Club. HS2 Ltd needed £400,000-worth of land from the club; to smooth things over it bankrolled a £7m development, including a new clubhouse (the chairman was "delighted").

Since 2017 HS2 has had to obtain more than 8,000 planning and environmental consents. It has gone to court more than 20 times. Such hold-ups are the biggest cause of uncertainty and higher costs in Britain, says Ricardo Ferreras of Ferrovial, which has built high-speed lines around the world. Other countries, notably France, grant sweeping planning powers and take a standardised approach to compensation.

Another big issue was the failure of HS2 Ltd to control costs. Effective project management and accounting should have led to tough questions. Instead, one civil servant complained that HS2 acted "like kids with the golden credit card".

The company asked firms to take on construction work without basic information about ground conditions. That led to rampant over-engineering, according to Andrew McNaughton, one of the scheme's architects, such as contractors insisting on installing concrete pile foundations where they were not needed. HS2 also signed huge contracts on a "cost-plus" basis, where firms are paid a percentage of the total value of the work. Sir Jon Thompson, who became executive chair last year, calls that "extraordinary": it gave contractors an incentive to go over-budget and the company no "levers" to stop them.

As costs spiralled, the route was pruned and the project's benefit-cost ratio sagged (see chart). In October Mr Sunak decided to cut his losses. In fact, he has made a bad situation worse. To see the problems HS2 now faces, continue another 55km along the original route to make a final stop at Whitmore, a village in Staffordshire.

Edward Cavenagh-Mainwaring, a dairy farmer in Whitmore, has been getting letters from HS2 for a decade. In early 2023 it finally acquired part of his farm, including one of his wildflower meadows. More of his fields were bought days before Mr Sunak announced that the Manchester leg would be scrapped. HS2 has spent over £600m ($755m) on land and property like this that it apparently no longer needs. Before it can be sold off again, there are miles of fences to take down and 1,800 boreholes to fill. Compulsory purchase is a slow and painful process. Undoing it will be, too.

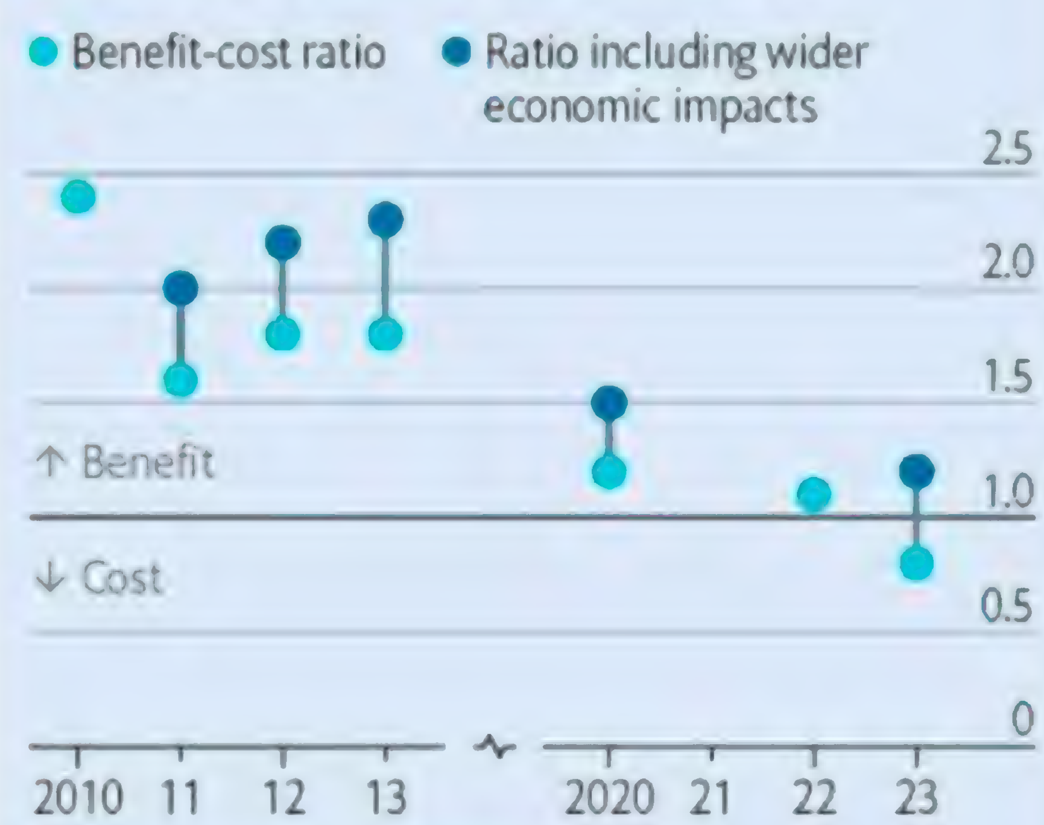
Yet returning Mr Cavenagh-Mainwaring's farm would not solve the real problem, which is that the rump line makes no sense. According to Mr Sunak, HS2 trains will run at up to 360kph (225mph) to Birmingham before switching to old tracks to trundle up to Manchester. But high-speed trains were not designed to run on the old track; they cannot tilt as they go round corners, meaning they would take longer than the current Pendolino trains.

The original plan was for 400-metre-long HS2 trains, capable of carrying 1,100 passengers, to run from London to an upgraded station at Manchester Piccadilly. With that station no longer being built, trains will need to be split, leaving them with less capacity than current trains. It is already too late to make changes to the rolling stock HS2 has ordered, Sir Jon has told MPs. As a result services from Birmingham northward are likely to be worse once HS2 has been completed.

The only way to rescue any value from the project would be to complete the section between Birmingham and Crewe, says Jim Steer, a civil engineer. This bit is critical because it would relieve pressure on the most congested section of the existing line. Sir Keir Starmer, the leader of the opposition, says Labour won't complete the whole project but will look at options if it enters government after an election later this year. But whatever it decides, Britain's *grand projet* has turned into a nightmare. ■

Reality bites

Britain, High Speed 2, by year of analysis



Source: Institute for Government

Bagehot | Ban it harder!

The politics of making the illegal even more illegal

CATS ARE not like diamond necklaces or Rolex watches. For one thing, they have minds and legs of their own. "They are known to occasionally make themselves at home on other people's sofas," acknowledged Mark Spencer, a government minister, to a committee of MPs on January 31st. The facts of feline behaviour have not deterred the government from backing a new bill that will make the "abduction" of a pet cat or dog punishable by up to five years in prison. The act of "inducing" a cat (perhaps with a tin of sardines) will also be caught by the new offence.

The problem with the bill, which is sponsored by Anna Firth, a Conservative backbencher, is not only, as a government "pet-theft taskforce" found, that public fears of this dastardly act far outweigh its actual incidence. It is that stealing is already punishable under the Theft Act of 1968 by up to seven years in prison, and that the stiffest sentences are already handed out for crimes that cause emotional distress. Ministers used to argue as much themselves until they yielded to a campaign by pet lobbyists. For when it comes to tackling an injustice that is already against the law, the answer can be simple: ban it harder.

What is true for cats and dogs is also true for war memorials. Vandalism has long been a crime. But in 2022, amid concern that activists might topple monuments to contentious historical figures, Parliament created a new provision of "criminal damage to memorials", punishable by up to ten years in prison. More is to come. Cops already have broad powers to tackle "disorderly conduct" and people "causing public nuisance". Still, the Metropolitan Police's hands-off approach to recent pro-Palestinian protests in London led the government to announce on February 8th that it would seek to make "climbing on war memorials a specific public order offence", punishable by three months in prison.

Britain is in the grip of a bad bout of statutory inflation, in which public demand for tough new laws outstrips the supply of social ills that have not yet been legislated upon. The result is law-making that renders the already illegal even more illegal.

This sort of legislative micromanagement would have appalled the version of the Conservative Party that David Cameron led in opposition during the 2000s. The defence of liberties against the authoritarian culture of New Labour was a big theme of the party's 2010 manifesto. "Labour continues to use ever more new legislation as a kind of rhetorical tool, a parliamentary squawk to indicate its attitudes, while totally neglecting to use and enforce the existing law," wrote one Boris Johnson, then a Tory backbencher and star columnist, in 2006 of the proposed offence of "glorifying terrorism". A noble sentiment and one Mr Johnson had completely forgotten by 2019, when he put forward a law that states, with epic redundancy: "It is recognised that the Parliament of the United Kingdom is sovereign."

Banning it harder is eye-catching, free and reassuringly tough, which is why Labour is still keen on the tactic. Questionable procurement during the covid-19 pandemic has become a running sore for the government, so Labour is considering a new offence of "fraud against the public purse". Yet fraud is already a crime. So is assault, but that has not deterred Labour from proposing a "new specific offence of assault against retail workers" in response to a wave of increasingly violent shoplifting.

Such measures can have unanticipated consequences. The problem with offering certain occupations a special legal protection from violent crime was apparent after a similar law was introduced in Scotland in 2021; soon groups representing cabbies and bus drivers lobbied for provisions of their own. New offences are also a clumsy tool for serious problems. Spiking, in which a victim's drink is drugged in order to rob or assault them, is a terrifying crime. It was already prosecutable under seven separate offences before the Home Office proposed legal amendments in December 2023 to show "without any doubt, spiking is illegal". But the reason why prosecutions are rare, and the true scale of spiking hard to define, is because hospitals do not routinely test for drugs in emergency wards. A new offence is unlikely to change that.

Syntax error

Ban-it-harderism may nonetheless seem harmless. Britons like their pets; they do not, as a rule, like their politicians. Reasserting existing laws in a loud voice is a more benign way to bridge the gap between governing and governed than, say, stirring a trade war with China. Yet it is a symptom of two malaises in British politics.

The first concerns the role of MPs. Ms Firth told the Commons that, for one constituent, the loss of her dogs (Mandy, Micky, Ruby and Chara) had been "as if her babies had been taken". Parliament, too, has been infantilised. MPs' time is misallocated. They are increasingly incentivised to think of themselves as super-councillors, tasked with sorting out constituency casework and championing local causes, rather than as national legislators. It is a brave MP who tells constituents that their idea for a bill, prompted by a local tragedy, would be an unhelpful complication to existing law.

The second malaise concerns law enforcement. The police response to pet theft is "virtually non-existent", said Ms Firth. If incidents of kittynapping were logged under a separate law, she argues, officers would take it more seriously. That logic is a common thread through bills to ban it harder. MPs have little visibility or control over the police, who are operationally independent. Restating the law in increasingly specific terms is a blunt attempt to jolt the police into affording certain offences a higher priority. It is akin to pounding the keyboard of a frozen computer in the hope of stirring it to life. The problem is that the list of crimes which overstretched and undermanaged police forces struggle to solve—rape, burglary, online fraud—is long. Cat theft is a low priority because much graver crimes are competing for attention. It is possible to ban things harder. They cannot all come first. ■

Counting votes around the world

Taking stock of 2024 so far

The first crop of elections does not bode well for the health of democracy

AROUND HALF the world's population, or some 4bn people, live in places that are holding elections this year. These polls will decide who governs over 70 countries. But together they also represent a big test for the health of democratic systems; for over a decade there have been fears that democracy as a political ideal is ailing. By February 14th, when Indonesia went to the polls, we estimate that countries with 770m people had cast ballots (or prevented their citizens from doing so): or roughly 18.5% of the year's total. That makes it possible to take an initial look at how the 2024 democracy test is going. The short answer is: not particularly well.

In one respect democracy is being modernised: a technological revolution is taking place as short-form videos and group messaging transform political campaigning around the world (artificial intelligence, including "deepfakes", is visible everywhere but is so far not decisive). Yet in another respect democratic processes are reversing, from Pakistan, where squabbling is under way after a recent dubious poll, to tiny El Salvador. An alarming number of elections are being interfered with.

What do we know so far? Ten countries have held, or suspended, elections. Earlier this month minnows Azerbaijan and El Savador held polls, as did weighty Pakistan. March will feature Russia's presidential poll (Vladimir Putin will romp to victory in an oh-so-surprising outcome). After that there will probably be votes in vast India in April and then for the European Parliament in June, among others.

The example America sets in November matters more than ever. The presidential contest is of supreme importance: whether this is a year of democratic backsliding depends disproportionately on this vote and the events surrounding it. All eyes will fix on a probable Biden-Trump rematch.

The election results fall into three camps so far: free-and-fair; fiascos-and-farces and indeterminate. Start with the first category. On January 13th William Lai Ching-te of Taiwan's Democratic Progressive Party (DPP) was triumphant. China dislikes the DPP because it rejects China's claims to sovereignty over Taiwan, but despite Chinese threats the electorate was not intimidated. The other squeaky-clean election has been in Finland.

The second category involves fiascoes and farces. Top of it is Pakistan, with its population of over 230m and history of political meddling by the armed forces. The election on February 8th was probably the country's least clean since the 1980s. The most popular politician, Imran Khan, whose own democratic credentials are questionable, was given three prison sentences in quick succession in January on bogus charges. Polling day was marred by violence and no party secured a majority in the election (see Asia section). In Bangladesh a poll on January 7th saw Sheikh Hasina's party scoop up 222 of the 299 seats up for grabs; the main opposition boycotted the election. The country is now in effect a one-party state.

In several smaller countries a similar erosion of democracy has taken place. On February 5th Senegal suspended its election, with its president, Macky Sall, once viewed as a defender of liberal values, sliding towards dictatorship. The country has company in the Sahel. Mali was originally due to hold an election on February 4th, which was then suspended last year; the date has passed without the poll being rescheduled. Burkina Faso, Chad and Niger have all recently had coups. On the other side of the Atlantic, on February 4th the "world's coolest dictator", El Salvador's Nayib Bukele, won a second term. And Azerbaijan's rigged election on February 7th saw its long-time dictator Ilham Aliyev win over 90% of the votes. He received congratulations from both Mr Putin and China's leader, Xi Jinping.

The third category involves indeterminate polls. We put Indonesia in this bucket: the vote appeared clean but the circumstances around the election suggest the country's democratic character is strained. The outgoing president, Joko Widodo, is attempting to exert dynastic control after bending the constitution to make his son the running-mate of the victor, Prabowo Subianto. There were complaints of state intimidation and other forms of interference during the campaign. Had Mr Prabowo failed to win the first round outright on February 14th, it would actually have been a sign of democratic health.

The idea that democracy is under pressure around the world is hardly new. Our sister organisation, EIU, pulls together a detailed annual democracy index, which has slipped over the past decade. Its 2023 index was released this week and shows ▸▸

autocracies becoming more entrenched (see chart). Using a longer-term index by V-Dem, a research body, the share of countries judged to be electoral democracies soared in the 1990s but has declined slightly in recent years to stand at about 50%. Certain opinion polls show a cohort globally who are sceptical about democracy, especially among the young.

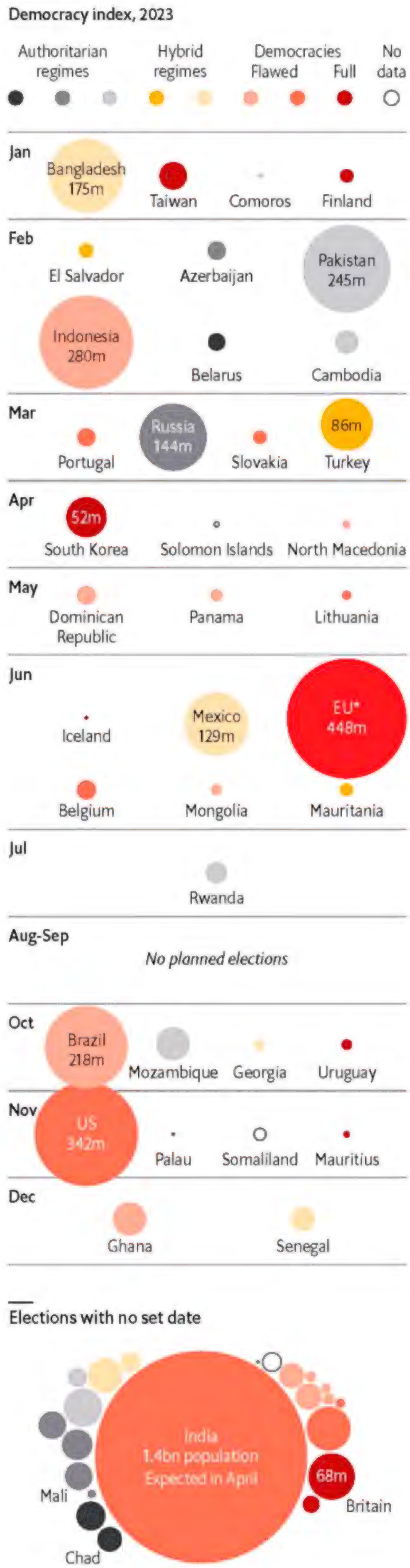
What might explain the further slippage seen so far in 2024? One possibility is technology. A striking feature of most campaigns has been the role of newer tech platforms: TikTok, the Chinese-controlled short-form video app, has about a billion users world-wide and is crucial. In India, where TikTok is banned, YouTube has been displacing Facebook as the platform of choice, while WhatsApp's voice-note feature allows illiterate people to receive propaganda. Everywhere political discussion has moved onto private messaging groups where the degree of misinformation and orchestration is difficult to ascertain.

It is possible that these shifts favour strongmen and authoritarians, by allowing them to communicate without scrutiny. They also have the resources to manipulate private messaging groups by using armies of proxies and bots to spread fake information. Not all the signals so far in 2024 point that way, however. In both Senegal and Pakistan the authorities suspended the internet and telecoms services before scheduled polls. This suggests that they were actually concerned about losing control of online speech.

Meanwhile a lot of the coercion involves more prosaic tactics. In the past authoritarians eschewed elections, or stuffed ballot boxes. Today they maintain a charade of constitutional democracy and use "lawfare" instead, for example through courts disqualifying opposition candidates. In Bangladesh, Pakistan, Senegal and elsewhere rival politicians have been disbarred by courts in the name of the rule of law. After squashing Senegal's election plans, Mr Sall spoke of the need for a "national dialogue" to create "conditions for a free, transparent and inclusive election".

Alongside technology and the rise of lawfare, a final possible explanation for democratic slippage is a more permissive global environment for autocrats as the post-1989 world order comes under strain. With wars raging, the United Nations rendered ineffective by superpower splits and the West focused on trying to restrain China, Iran and Russia, upholding democracy has taken a back seat. In 2021 President Joe Biden held a global democracy summit calling the defence of democracy "the defining challenge of our times". But America's officials are stretched. Fresh from his fifth tour of the Middle East in four months Antony Blinken, America's secretary of state, managed to call Senegal's president on February 13th. He urged Mr Sall to "restore Senegal's electoral calendar" and expressed America's "serious concerns" over events in the country.

Countries with an election in 2024, circle size=population



*All EU countries are considered either flawed or full democracies
Sources: EIU; press reports; UN; *The Economist*

Another 60-odd elections are still in the offing, in countries with 3.4bn people. Some of these will be charades, such as those in Belarus and Russia in the coming weeks. Iran's poll in March will hardly be democratic: prominent reformist candidates have been banned. But the vote to select the 88-strong Assembly of Experts will be crucial because that body will appoint the successor to Ali Khamenei, the ailing 84-year-old supreme leader.

Nobody doubts that elections to the European Parliament in June will be free and fair. The main concern there is that hard-right parties, which are already in government or polling above 20% in several European countries, may have a breakthrough success. But even in free and fair elections, incumbents can make the path to victory easier for their chosen successors. Mexico holds polls in June. Andrés Manuel López Obrador, the outgoing president, is intent on helping his preferred successor, Claudia Sheinbaum, with unaffordable pre-election handouts to voters. She is likely to win. But so far Mexico's constitution is holding up against the populist threat Mr López Obrador has posed.

The bumpy road ahead

Two huge elections will be acid tests of the state of democracy. In India, the most populous democracy of all, Narendra Modi is on track for a third term as prime minister. He is a popular politician who oversees a fast-growing economy. But the campaign has seen the rule of law stretched: journalists have been hounded, Muslims harassed and opposition politicians subject to corruption probes and arrest. After the result in May, the world may discover how much further he plans to erode India's democratic norms and institutions.

The other country to watch, inevitably, is America. Although Mr Biden has repaired some of the damage done to the country's reputation in recent years, it is no longer the beacon of liberty and bastion of democracy it once was. Donald Trump's attacks on the rule of law and the judiciary come as a multitude of cases against him are litigated. If he wins in November, questions will grow concerning the ability of America's institutions to withstand a second term under him. And if Mr Trump is prepared to mount sustained campaigns against democratic checks and balances at home, he would almost certainly abandon criticism of autocrats abroad. Whether or not he triumphs, democracy's defenders face a tough task ahead. This year is critical for democracy, and so far developments are concerning. That means that next year could be an even greater ordeal. ■

Semiconductors (1)

Chipping in

SHANGHAI

China is quietly shaking off its reliance on foreign chipmaking technology

From consumer gadgets to cars, China has shown a knack for producing cutting-edge technology. Yet the semiconductors that power the digital economy have proved trickier to master. That has been the source of much anxiety among its political and business elites in recent years. America's decision in 2022 to halt exports to the country of its whizziest chips and chipmaking tools brought into stark relief the chokehold of China's geopolitical rivals over the industry. In December last year China's imports of the lithography machines used to imprint circuits onto silicon wafers surged by 450%, year on year, as local chipmakers raced to buy advanced kit from ASML, the Dutch market leader, before export restrictions by the Netherlands came into effect in January. It has also been hoovering up semiconductor equipment from Japan (see next article).

Although the Chinese government has been splashing subsidies on its domestic chip industry for many years, mounting concern over the trade restrictions being imposed by America and its allies have led it to double down on the effort. In 2022 China's government ramped up a national drive often referred to as the "Information Innovation" project, or *xinchuang*, that aims to replace foreign suppliers of, among other things, semiconductor technology. What's more, whereas the state once pushed reluctant chipmakers to cooperate with local suppliers, their investors and boards now demand it as a form of insurance against trade wars. As a result, China's semiconductor supply chain is steadily deepening. But can it ever match that of its rivals?

→ Also in this section

China's chip industry operates under a shroud of secrecy. Breakthroughs and setbacks are often deemed to be state secrets, the divulgence of which can result in arrest. In August Huawei, a Chinese tech champion, shocked the world by producing a smartphone that contained a seven-nanometre (nm) chip, making it capable of 5G internet speeds. The company is now rumoured to be on the cusp of creating chips as small as 5nm, in partnership with SMIC, China's largest foundry. Huawei's Ascend chips, which the firm has designed for AI applications, are reportedly now being used by the likes of Baidu, a local search-engine giant and creator of Ernie, China's answer to ChatGPT. Like Nvidia, America's AI-chip champion, Huawei has developed a proprietary software platform, called CANN, that helps developers use its chips to build AI models.

All that still places China's chip industry far from the technological frontier. Even if Huawei and SMIC eventually succeed at producing 5nm chips, they will remain well behind Samsung, a South Korean tech giant, and TSMC, a Taiwanese foundry, both of which began mass-producing 3nm chips as far back as 2022. China's lack of advanced lithography equipment will be a big barrier to further progress. In December a top shareholder in SMEE, China's main hope in lithography, said on social media that the company's machines had succeeded at producing 28nm chips—though it then quickly delet- ▸▸

ed the details, causing plenty of confusion. If true, that would still leave the company trailing ASML, whose top-of-the-line machines can produce 3nm chips.

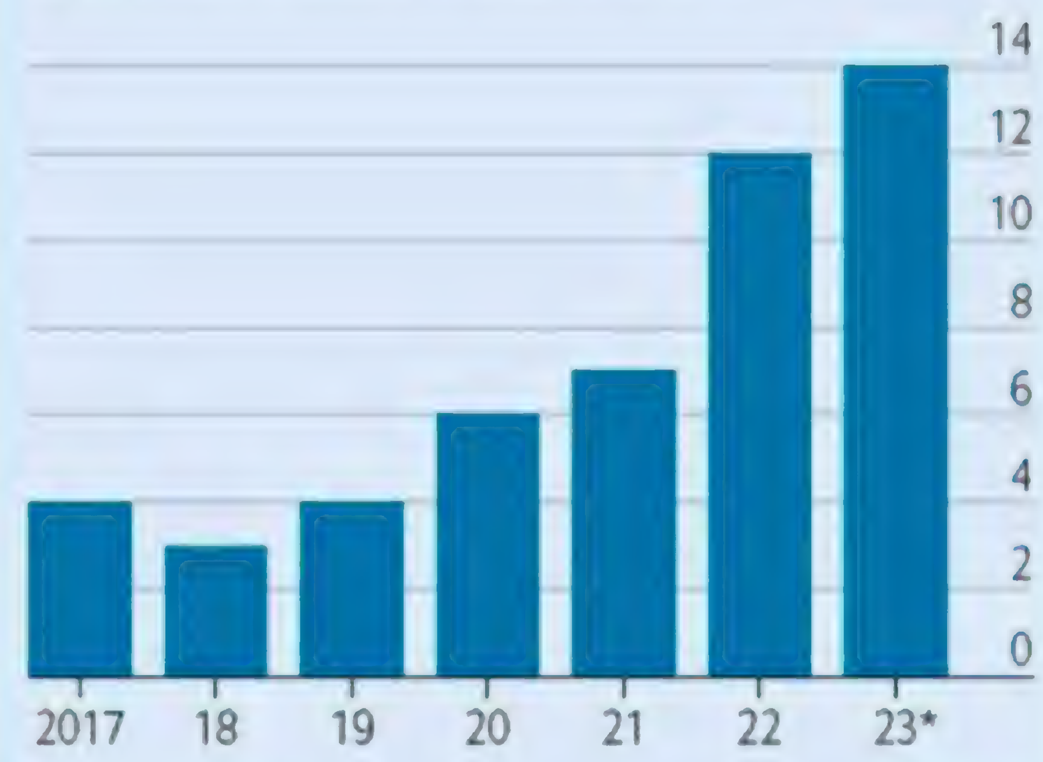
Look away from the bleeding edge, however, and China is steadily chipping away at its reliance on foreign semiconductor technology. Huawei, which was burned in 2019 by sanctions that cut off its access to American technology, has been cultivating China's wider chipmaking ecosystem. It is reportedly co-operating closely with a number of chip foundries, either by co-investing in projects or exchanging staff. In March last year it declared it had made a number of breakthroughs in the development of electronic-design-automation (EDA) software, used to generate blueprints for chips, which it said would free China's industry from the need to rely on foreign suppliers of those tools when producing semiconductors of 14nm or more. Though unconfirmed, its collaborator on this is widely believed to be Empyrean, a Chinese maker of EDA tools whose sales have rocketed in recent years.

Such collaborations are happening more often. China's foundries historically relied on importing tried and tested machinery from abroad. Now some of the largest, including SMIC, have become more open to trialling local alternatives. That gives the suppliers a chance to receive feedback and improve their designs. Although this comes with costs—and risks—for the chipmakers, China's government is thought to be easing the way by providing subsidies to those of them that purchase local equipment.

The upshot has been a big boost to Chinese manufacturers of chipmaking equipment. The domestic market share of Chinese producers of wafer-fabrication tools has risen from 4% in 2019 to an estimated 14% last year, according to Bernstein, a broker (see chart). AMEC, a Chinese firm whose machines are used to strip away residual material from a chip, controlled 10% of the Chinese market in 2021. Since then the company has been rapidly gaining share from foreign rivals such as America's Lam Research (where its founder, Gerald Yin, used to work). Bernstein reckons AMEC's market share reached 16% last year and will rise to around 30% by 2025. Naura, a peer of AMEC, estimates its sales grew by 50% last year. Wazam, a Chinese supplier of the film used to insulate semiconductors, is beginning to make inroads, too, with a trial under way at a local chipmaker.

Plenty more support will be needed before China can rely entirely on local suppliers for the many stages of chip production. It has already pumped some $150bn of subsidies into its chip industry over the past decade, according to an estimate by America's Department of Commerce. The government, through its investments, is now

Tools with Chinese characteristics
China, domestic chip-fabrication equipment makers, market share, %



Source: Bernstein *Estimate

present throughout the country's semiconductor supply chain. SMIC is partially state-owned, as is AMEC. Empyrean is majority-owned by a state enterprise. The government of Shenzhen, the southern city where Huawei is based, holds stakes in many of the chipmakers the company is working with. None of this is as efficient as relying on global supply chains. But China's officials have security rather than efficiency in mind. And they have decided that the price is worth paying. ■

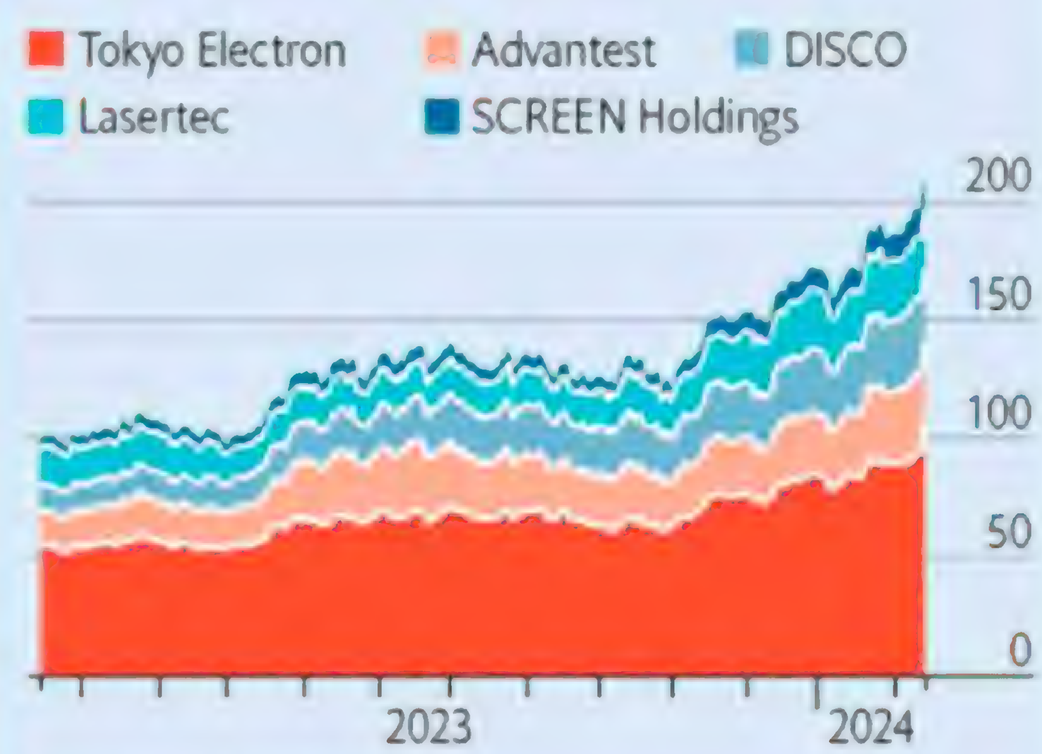
Semiconductors (2)

Tokyo Electrified

Japan's semiconductor toolmakers are booming—for now

CORPORATE JAPAN, long snubbed by investors, has been the source of much attention lately. That is especially so for the country's manufacturers of chipmaking tools. On February 13th Tokyo Electron's share price jumped by 13% after it reported higher profits than expected for the final quarter of last year, pushing its market value above $100bn, roughly ten times what it was worth a decade ago. It is now Japan's fourth-most-valuable company, trouncing better-known peers such as Mitsubishi, Nintendo and SoftBank Group.

Feeling chipper
Market capitalisation, $bn
Selected Japanese chip toolmakers



Source: LSEG Workspace

Tokyo Electron is the largest among a crowd of Japanese purveyors of chipmaking tools for which business has been booming. The combined market capitalisation of the five most valuable—Tokyo Electron, Advantest, DISCO, Lasertec and SCREEN Holdings—has doubled, in dollar terms, over the past year (see chart). These companies, which suffered from a post-pandemic slump in sales of electronics that caused chipmakers to slash investments, are now on the up. The Semiconductor Equipment Association of Japan, an industry body, expects a 27% increase in sales of machinery this year and a further 10% rise in 2025, more than reversing the fall of 19% in 2023.

The latest rally is about more than the ups and downs of a notoriously cyclical industry. Demand for increasingly complex chips capable of handling artificial-intelligence functions means demand for more equipment to make them. One estimate from McKinsey, a consultancy, puts the cost to build and equip a factory that produces five-nanometre (nm) chips at around six times the cost of one that produces 28nm chips, which were cutting-edge a decade ago.

Japanese toolmakers have long played dominant roles in niche areas of the semiconductor supply chain. Tokyo Electron controls roughly 90% of the market for tools which apply photoresist coating—a light-sensitive chemical applied to a semiconductor wafer in the manufacturing process. DISCO holds a similarly dominant share of the precise cutting and grinding tools needed for chipmaking.

The revenues of these firms have thus far not been crimped by new export controls introduced by America on the sale of certain types of advanced chipmaking machinery to China. In fact, as China has raced to develop its own chipmaking capacity, sales of equipment to its neighbour to the east have surged. Almost half of Tokyo Electron's sales in the final quarter of last year came from China.

Yet that also points to risks ahead. If relations between Beijing and Washington worsen, the Japanese government could be prodded into implementing broader restrictions on the sale of its chipmaking tools to China. Meanwhile, China is expanding its effort not only to make its own chips, but also the machinery that produces them, which could squeeze out Japanese firms (see previous article). For Tokyo Electron and its peers, the deteriorating relationship between America and China is a boon for business today. In the future, though, it may become a strain. ■

Hollywood

Paramount's paramours

Would-be suitors woo a Hollywood studio in distress

FROM "GREASE" to "Breakfast at Tiffany's", Paramount Pictures has produced plenty of good romances during its 112-year history. Now the Hollywood studio is itself the subject of a courtship drama involving streaming rivals, private-equity buccaneers, a billionaire's son and the owner of the Weather Channel. The wooing of Paramount Global, the studio's parent company, has begun because Shari Redstone, president of National Amusements, which has a controlling stake in the firm, appears ready to sell. The battle to buy Paramount from the Redstones marks the fading of a Hollywood dynasty—and shows the sorry state of the entertainment industry.

Paramount, the last big studio still based in Hollywood, has seen lots of action in recent years. Ms Redstone had to wrestle control of the firm from the former girlfriends of her father, Sumner, who died in 2020 after building an empire from a chain of cinemas he had inherited from his own father. Paramount Global today comprises the film studio, the Paramount+ streaming service and old-school "linear" TV networks from CBS to MTV.

It is in trouble. Linear TV, which makes up nearly 80% of Paramount's revenue, is sinking as cable subscribers cancel their contracts. Streaming is supposed to provide the company with a lifeboat. Paramount+ has more than 60m subscribers and plenty of hits, including a series of "Yellowstone" spin-offs. But it lost $1.2bn in the first nine months of 2023 and appears to be years away from breaking even. Paramount's market value has fallen by half in the past two years, to under $9bn.

In recent weeks Ms Redstone has been mulling various proposals. David Zaslav, head of Warner Bros Discovery (WBD), went to Paramount just before Christmas to sound out a possible takeover. In January Apollo, a private-equity firm, was reported to be circling. David Ellison, head of Skydance, a production company, made an offer later that month. Then Byron Allen, who owns the Weather Channel and other media assets, said he too had made a bid.

Mr Ellison's deal is said to have progressed farthest. His partners include KKR and RedBird Capital, a pair of private-equity firms; his father, Larry, who co-founded Oracle, also has a fortune of $130bn handy. The main attraction for Skydance seems to be Paramount's film studio. The linear-television assets, meanwhile, might be sold on—perhaps to Mr Byron, who says he is more interested in the waning TV networks, which at least still make money, than the studio or streamer.

The possible carve-up points to wider disruption in Hollywood. All of the "legacy" studios—that is, ones that began in the era of celluloid rather than streaming—share at least some of Paramount's problems. As linear TV declines, they have spent a fortune on trying to make streaming work, collectively losing $25bn on the enterprise between 2020 and 2023, according to Bernstein, a broker. WBD's streaming business broke even last year, after ruthless cost-cutting. Disney says it will get there this year. But for smaller streamers like Paramount+, NBCUniversal's Peacock and Fox's Tubi, there is "no clear sight of profitability", Bernstein believes. Even those no longer losing money are nowhere close to the profit margins of the linear era.

The best hope of competing with the bigger streamers, like Netflix, may be to partner up. There are already signs that is happening. On February 6th Disney, Fox and WBD unveiled a plan to bring their most valuable sports content together onto a new streaming platform. Bigger tie-ups may still be to come.

Yet by pooling their resources the media giants would also be pooling their problems. A marriage between WBD and NBCUniversal, perhaps the most likely new combination, would result in a company that made nearly half its revenue and nearly two-thirds of its profit from linear TV, points out MoffettNathanson, a firm of analysts. "The situation in US media has increasingly progressed from challenged to desperate," MoffettNathanson argues. Time for Ms Redstone to make a match. ■

You belong to me, Holly

Retail

The super store

Why Costco is so loved

IN THE NEARLY 40 years that *The Economist* has served up its Big Mac index, the price of the McDonald's burger in America has more than tripled. In that same period the cost of another meaty treat—a hot-dog-and-drink combo at Costco—has remained steady at $1.50. Last year customers of the American big-box retailer devoured 200m of them. Richard Galanti, Costco's long-time finance boss, once promised to keep the price frozen "for ever".

Customers are not the only fans of Costco, as the outpouring of affection from Wall Street analysts after Mr Galanti announced his retirement on February 6th made clear. The firm's share price is 430 times what it was when he took the job nearly four decades ago, compared with 25 times for the S&P 500 index of large companies. It has continued to outperform the market in recent years. What lies behind its enduring success?

Costco is the world's third-biggest retailer, behind Walmart and Amazon. Though its sales are less than half of Walmart's, its return on capital, at nearly 20%, is more than twice as high. Charlie Munger, a famed investor who served on Costco's board from 1997 until his death last year, called it a "perfect damn company". Mr Galanti, who describes Costco's business model as "arrogantly simple", says the company is guided by a simple idea—hook shoppers by offering high-quality products at the lowest prices. It does this by keeping markups low while charging a fixed membership fee and stocking fewer distinct products, all while treating its employees generously.

Start with margins. Most retailers boost profits by marking up prices. Not Costco. Its gross margins hover around 12%, compared with Walmart's 24%. The company makes up the shortfall through its membership fees: customers pay $60 or more a year to shop at its stores. In 2023 fees from its 129m members netted $4.6bn, more than half of Costco's operating profits.

Joe Feldman, an analyst at Telsey Advisory Group, a research firm, argues that the membership model creates a virtuous circle. The more members the company has, the greater its buying power, leading to better deals with suppliers, most of which are then passed on to its members. The fee also encourages customers to focus their spending at Costco, rather than shopping around. That seems to work; membership- ▸▸

renewal rates are upwards of 90%.

Next, consider the way the company manages its product lineup. Costco stores stock a limited selection of about 3,800 distinct items. Sam's Club, Walmart's Costco-like competitor, carries about 7,000. A Walmart superstore has around 120,000. Buying more from fewer suppliers gives the company even greater bargaining heft, lowering prices further. By limiting its range, Costco can better focus on maintaining quality. Less variety in stores helps it use space more efficiently: its sales per square foot are three times that of Walmart. And with fewer products, Costco turns over its wares almost twice as fast as usual for retailers, meaning less capital gets tied up in inventory. It has also expanded its own brand, Kirkland Signature, which now accounts for over a quarter of its sales, well above average for a retailer. Its margins on its own-brand products are about six percentage points higher than for brands such as Hershey or Kellogg's.

Last, Costco stands out among retailers for how it treats its employees. Some 60% of retail employees leave their jobs each year. Staff turnover at Costco is just 8%; over a third of workers have been there for more than ten years. One reason for low attrition is pay. Its wages are higher than the industry average and it offers generous medical and retirement benefits. Another is career prospects. The company prefers to promote leaders from within. Although Mr Galanti's successor has come from outside, the rest of Costco's executive team has been with the company for more than 20 years. The late Mr Munger was confident that Costco had "a marvellous future". Its customers could be enjoying $1.50 hot dogs for many years to come. ■

Bartleby The science of conversation

Stop thinking about your next point and listen to the one being made

SUCCESSFUL WORKPLACES are usually characterised by good communication. Bosses provide a clear sense of where they want the firm to go; employees feel able to voice disagreements; colleagues share information rather than hoarding it. But being a good communicator is too often conflated with one particular skill: speaking persuasively.

In a paper published in 2015, Kyle Brink of Western Michigan University and Robert Costigan of St John Fisher College found that 76% of undergraduate business degrees in America had a learning goal for presentation skills, but only 11% had a goal related to listening. Business students were being schooled to give TED talks rather than have conversations. That may have costs. Another study, conducted by Dotan Castro of the Hebrew University of Jerusalem and his co-authors, found that when people felt listened to by those in supervisory roles their creativity and sense of psychological safety improved.

A focus on talking is understandable. The set-piece moments of careers, like job interviews and big presentations, are about transmitting information. The boss gets to be at the podium, the minions get to be in the audience. Videos of someone giving a speech are much more shareable than someone silently nodding. But interest in what makes everyday communication tick has also risen, as the importance of teams grows and as conceptions of leadership increasingly emphasise softer skills.

Recent research by Beau Sievers of Stanford University and his co-authors asked groups of MBA students to discuss the meaning of ambiguous film clips. The presence of people perceived to be of high status seemed to impede consensus: these folk spoke more and were readier to reject the explanations of others. Groups that reached consensus were more likely to have a different character in them: people who were well-connected but not dominant, who asked lots of questions and who encouraged interaction. They made everything align—even the neural activity of their groups.

Mr Sievers's research features in "Supercommunicators", a new book by Charles Duhigg, a journalist at the *New Yorker*. Mr Duhigg looks at how some people forge stronger connections with others and at the techniques for having better conversations. His canvas ranges more widely than the workplace but some of its lessons are applicable there.

One chapter tells the story of the Fast Friends Procedure, a set of 36 increasingly intimate questions that are particularly effective at turning strangers into friends. The questions were first put together in the 1990s by Elaine and Arthur Aron, two psychologists at the State University of New York at Stony Brook. Their survey was designed for the lab, not the workplace. You should not suddenly start asking new colleagues what their most terrible memory is or how they feel about their mother. But if it is important to build team connections fast, then—Britain, look away now—reciprocal moments of vulnerability do seem to help.

Another chapter looks at ways to bring together people with diametrically opposed views, in this case Americans on either side of the debate over gun control. The difficulty here was in persuading people that they were genuinely being listened to, not dismissed as gun-toting loons or lily-livered liberals. Mr Duhigg describes an approach called "looping for understanding", in which people ask questions and then repeatedly distil their understanding of what they have heard back to their interlocutor.

Polarised beliefs of this sort are rare inside firms. But looping techniques still have their place: when there are long-running conflicts between individual employees, say, or in negotiations and mediation processes.

Mr Duhigg's advice can seem obvious at times. And his examples do not always translate to the workplace. Sometimes it is more important to make a decision than to excavate everyone's point of view. Reaching consensus is vital on a jury but less necessary in a corporate hierarchy. There really is a limit to how much vulnerability you want from a leader.

But his book is a useful reminder that demonstrable curiosity about other people's experiences and ideas can benefit everyone. Asking questions, not cutting people off, pausing to digest what someone has said rather than pouncing on breaks in a discussion to make your own point: these are not enough to qualify someone as a supercommunicator. But in plenty of organisations they would still represent good progress.

E-commerce

Boxing match

SAN FRANCISCO

How worried should Amazon be about Shein and Temu?

"SHOP LIKE a billionaire." With that enticing slogan Temu touted itself to Americans watching the Super Bowl on February 11th. Football fans had been treated to a similar advert from the e-commerce company at last year's event. But this time the message was hammered home. In all, Temu's ad played five times. That won't have been cheap. A 30-second slot during this year's Super Bowl cost around $7m. JPMorgan Chase, a bank, reckons the company will spend $3bn on marketing this year, up from $1.7bn in 2023.

Temu, based in Boston, is an offshoot of Pinduoduo, a Chinese e-commerce firm. It is attempting to replicate the success of Shein, a Chinese fast-fashion seller, which shot to success in America in 2021 helped by clever marketing and ultra-low prices. In their bid to win over American shoppers the duo are spending so lavishly on digital ads that their footprints show up in big tech companies' earnings. On February 1st Susan Li, the chief financial officer of Meta, a social-media giant, said that Chinese advertisers contributed 10% of her firm's revenue last year and five percentage points to its worldwide revenue growth. In November Josh Silverman, the boss of Etsy, an online marketplace for artisan knick-knacks, blamed Temu and Shein for pushing up the price of digital advertising.

All that spending has bought some brand recognition. Last year Temu was the most downloaded app in America, Britain, France and Germany, according to Business of Apps, a research firm. Shein is already a shopping sensation among American teenagers. But can the firms win over American shoppers en masse?

Although Temu stocks a broader range of items, from children's toys to industrial tools, than Shein, which mostly sells clothing, they have similar business models. For both, the main advantage is price. Michael Morton of MoffettNathanson, a research firm, estimates that the same items of women's clothing on Temu are two to four times dearer on American websites. Temu offers electric toothbrushes, sunglasses and backpacks for about $1 each.

The pair keep costs low in many ways. One is to cut out middlemen and deal directly with Chinese factories. Another is to charge merchants lower fees than American rivals do. They also eschew enormous logistics operations in America like Amazon's. Instead they ship products from warehouses in China and have them delivered to shoppers in America by UPS, FedEx or the post. Customers thus get low prices, but not speedy delivery. Packages can take weeks to arrive.

For now, Temu is focused on market share rather than profit. Bernstein, a broker, reckons that it loses around $10 per item sold in America. It may be able to keep this up for a while, bankrolled by Pinduoduo's domestic success. Last year the parent firm generated $12bn in cash from operations. Shein, by contrast, is looking to raise more funds. In November it filed for an initial public offering in America. If the listing happens, it will be huge: at its most recent funding round in May 2022 the company was valued at $66bn.

So far the pair have made only small inroads into America's e-commerce market. Temu and Shein both have shares of about 1%, according to Bernstein. Amazon has 38%. Even so, the local giant is taking them seriously. In December Amazon said it would cut merchants' fees for clothing priced under $15, probably in response to the twin threat. In September it rolled out an end-to-end supply-chain service in which it picks up goods from merchants' factories and ships them to customers, mirroring what its Chinese rivals do.

But Amazon is unlikely to be hurt first, or most. Clothing and accessories account for only 16% of its sales, according to eMarketer, a research firm, so Shein is probably a bigger threat to fast-fashion labels such as Forever 21. And for Temu, the absence of a local logistics network will make it difficult to compete with Amazon when it comes to goods customers want quickly, such as dishwasher tablets. It is probably a bigger threat to eBay or Etsy.

That may eventually change. Both firms have bought warehouse space in America and struck partnerships with local logistics firms. Shein is reportedly poaching supply-chain specialists from Amazon. Temu may also start to sell dearer goods, such as smartphones, a shift its parent pulled off in China. That would put it into more direct competition with Amazon and the similarly mighty Walmart.

Cheap shots

Plenty could still go wrong for the two. Each must compete both with American incumbents and with each other. TikTok Shop, a marketplace run by the social-media firm that launched in America in September last year, may also get in their way. Geopolitics may hurt them, too. A committee of American senators is probing their alleged links to forced labour. (Both firms deny any such connections.) Analysis by Morgan Stanley, another bank, suggests that Americans' willingness to shop at Temu may already be waning, perhaps as the novelty has worn off.

That said, Mark Shmulik of Bernstein argues that increasing market share from zero to 1% is more difficult for new e-commerce firms than raising it from 1% to 5%. Getting consumers to first take notice is tricky. Once a brand is familiar, it is easier to sell customers more things—and more expensive ones, too. Temu and Shein may have already done the hardest part of making it in America. ■

How low can they go?

Schumpeter | Nerves of steel

The row over US Steel reveals the new meaning of national security

Last summer US Steel was considering taking the capitalists' way out—by selling itself. American steelmaking has suffered decades of decline, ostensibly as a result of foreign competition. At home traditional integrated producers like US Steel have been overtaken by "mini-mills" powered by electricity and non-union workers. In August Cleveland-Cliffs, a rustbelt rival, announced that it had made an offer to buy US Steel and had been rebuffed. Dozens of suitors emerged. In December Cleveland-Cliffs made a final bid of $54 per share, to be paid in cash and stock.

It was bested by, of all things, foreign competition. On December 18th US Steel said it had agreed to be bought by Nippon Steel, Japan's biggest steelmaker, for $15bn (or $55 per share) in cash. The offers from Cleveland-Cliffs and Nippon promised shareholders almost identical financial value, but came with very different risks. Combining with Cleveland-Cliffs would attract antitrust scrutiny; a fleet of carmakers complained that the merged company would dominate the automotive steel market. Selling to Nippon would rile politicians and require the blessing of the Committee on Foreign Investment in the United States (CFIUS), America's increasingly strident inbound-investment watchdog. US Steel's lawyers were sanguine about the risks of selling a corporate icon to a Japanese firm. Nippon won.

The ensuing pile-on has been a case study in America's protectionist creep. Lael Brainard, one of President Joe Biden's economic advisers, said the deal merited "serious scrutiny" from CFIUS. The union representing steelworkers called it "greedy". Lourenco Goncalves, the boss of Cleveland-Cliffs, chastised US Steel's board for ignoring national security. He told investors that US Steel had been "hell-bent" on selling to a foreign firm. "I would block it instantaneously," said Donald Trump, the runaway favourite to be the Republican nominee for the presidential election.

Despite the furore, US Steel expects to complete the deal during the second or third quarter of this year. Investors are less confident—shares in the company change hands at $46 apiece, nearly a fifth below Nippon's offer price. Once the deal lands on CFIUS's desk, the body has 90 days to investigate; if the president wishes to block the takeover, he then has 15 days to say so. (In practice, the process can be extended if a firm withdraws its formal notice to CFIUS and then resubmits it.)

Nippon's bosses face an emboldened committee whose brief has expanded along with American politicians' definition of national security. In September 2022 Mr Biden directed CFIUS to focus its attention on the security of supply chains and technological leadership. Such changes have made CFIUS busier and tougher. In 2022 it reviewed a record number of notices despite foreign direct investment in America falling by half. Transactions that were approved increasingly came with strings attached.

Yet the handwringing over Nippon's acquisition of US Steel is misguided. The national-security risks posed by a deal can be seen as a combination of the intentions of the buyer and importance of the seller. A Chinese company shopping for American firms producing cutting-edge technology that could help its country's armed forces should, and does, set off warning sirens. Nippon's acquisition should not.

Look, first, at the buyer. Competition with Japan during the 1980s empowered CFIUS by codifying the presidential power to block deals. Today, though, Japan is a crucial ally in America's higher-stakes competition with China. That has not eased the scrutiny of would-be Japanese buyers: between 2020 and 2022 only Chinese firms filed more notices with CFIUS. Some of America's politicians see the folly in that. In December a bipartisan committee of lawmakers tasked with examining US-China relations published a shopping list of nearly 150 policy recommendations, among them to add Japan to the "whitelist" of countries whose firms are exempted from some onerous CFIUS rules.

Consider also the seller. The importance of America's third-largest producer of steel to national security has probably been overstated. Tariffs on steel imports, such as those imposed by Mr Trump in 2018, have been justified on the grounds of maintaining domestic capacity should a war break out. But Nippon could be compelled to keep US Steel's operations running as part of a deal. And in the case of a war US Steel's operations could be requisitioned from a disobliging foreign owner.

So what really lies behind politicians' opposition to the deal? A closer look reveals that their main motivation is preserving jobs. And whereas workers' rights are probably not yet at issue in the White House situation room, the notion of "foreign policy for the middle class" is stretching the definition of national security beyond recognition. One group of rustbelt lawmakers wrote to Janet Yellen, America's treasury secretary, to argue that CFIUS should consider the effects of the deal on stakeholders including workers in its assessment. Four signatories to a letter demanding similarly broad scrutiny were members of the same committee that less than a month earlier had advocated adding Japan to CFIUS's whitelist. Mr Trump's comments were made at a meeting with the boss of a union. Given the industry has seen its workforce decline by more than a third since the turn of the century, largely under domestic ownership, even this anxiety looks misplaced.

Two roads diverged

It is only natural that bosses at US Steel ponder the deal not taken. Although America's trustbusters have been unpredictable under the stewardship of Lina Khan, a number of her crusades have struggled in court, and anti-competitive behaviour is still an issue that can be argued with numbers. The decisions of CFIUS, by contrast, are almost entirely beyond the reach of judges. And arguments around national security are increasingly swallowing the light around them. ■

The burning question

FORT COLLINS

The answer to the biggest climate conundrum, decarbonising industry, may be electrification

BASF IS IN the business of molecules. As the world's biggest chemicals firm, with operations in more than 90 countries, it makes a lot of them. When those molecules contain carbon atoms (and a great many do—they are a wonderfully versatile resource) those carbon atoms tend to come from fossil fuels. When their manufacture requires high temperatures, which is also often the case, that heat comes from burning fossil fuels. Until recently BASF's massive plant in Ludwigshafen in Germany accounted for 4% of the country's entire consumption of natural gas.

Conventional wisdom has it that such a firm cannot really hope to lower very much the number of carbon-dioxide molecules it creates in the course of its business. The path to decarbonisation will come instead from gathering up those molecules and disposing of them underground, a process known as carbon capture and storage (CCS). The same conventional wisdom holds that if BASF were to swear off burning molecules of gas to create heat, the obvious green alternative would be to burn hydrogen molecules instead. Those molecules would have to be manufactured, too, in an energy-intensive process.

That is why the recent declaration by Martin Brudermüller, the boss of BASF, that "the decarbonisation of energy-intensive industries can only be achieved through electrification" sounds, to many ears, like heresy. Electricity is for houses and light bulbs and maybe even for cars, but not for heavy industries built around burning heroic quantities of fossil fuel. Yet Dr Brudermüller is not alone.

BASF has joined a consortium including SABIC, a Saudi chemicals firm, and Linde, a European engineering firm, to develop an electric furnace that can generate heat intense enough for the chemical reactions that are their bread and butter. These firms are not the only recent converts to the electrification of industry. On February 8th Rio Tinto and BHP, both gargantuan mining firms, announced a joint effort to build Australia's first electric smelter for iron ore. Fortescue, another mining giant, is introducing all-electric excavators and mining lorries, while Spain's Roca Group recently unveiled the first electric industrial tunnel kiln for ceramics. Such innovations offer a new path to slowing global warming which may in many cases prove quicker and easier than approaches based on CCS and hydrogen.

Industrial fail

According to the International Energy Agency (IEA), a research body, industry consumes a third of all global energy, with the generation of heat accounting for three-quarters of that. A staggering 90% of that heat is made by burning fossil fuels. All this makes industry a bigger source of greenhouse-gas emissions than power generation or transport. What is more, whereas carbon-dioxide emissions from power generation appear to have peaked and, if electric vehicles continue to proliferate, emissions from transport may soon stop growing, too, industrial emissions are projected to keep growing indefinitely (see chart 1 on next page).

Aware that this is impossible to square with their commitments to slash emissions, governments in advanced economies have showered subsidies on hydrogen and CCS as the technologies most likely to help decarbonise industry. Both, however, have so far disappointed. Electrification, meanwhile, had long been dismissed for two reasons. First, it was argued, the very high temperatures and steam required by heavy industry would be difficult or at least uneconomic to produce with electricity. Second, the standard ways of making cement and steel require carbon as an input, which means emitting carbon dioxide is unavoidable even if clean electricity were to replace the burning of fossil fuels.

Yet McKinsey, a consultancy, predicts that 44% of the decarbonisation it foresees in Europe by 2050, should the EU stick to ▸▸

its net-zero targets, will come from electrification, more than double the share of hydrogen and CCS combined. Why is it so optimistic about an unheralded technology?

Electrification is suddenly getting a second look for several reasons, argues Jeffrey Rissman in a new book: "Zero-Carbon Industry". Most obviously, green electricity has become much cheaper and more widely available thanks to the remarkable decline in the cost of wind and solar power. Another factor is growing wariness of reliance on natural gas, thanks to the global price shock that followed Russia's invasion of Ukraine. Supplies of gas ran so low in Germany, for example, that the government considered rationing it for industrial users like BASF.

But the best reason for reconsideration is innovation. Making things hot with electricity is not that hard; think of an electric kettle. Such technologies can scale: if you want ten times as much boiling water, get ten kettles or one bigger one. But if you want to get to 1,000°C instead of 100°C, until recently there were few electric options. That is now changing.

Electric avenue

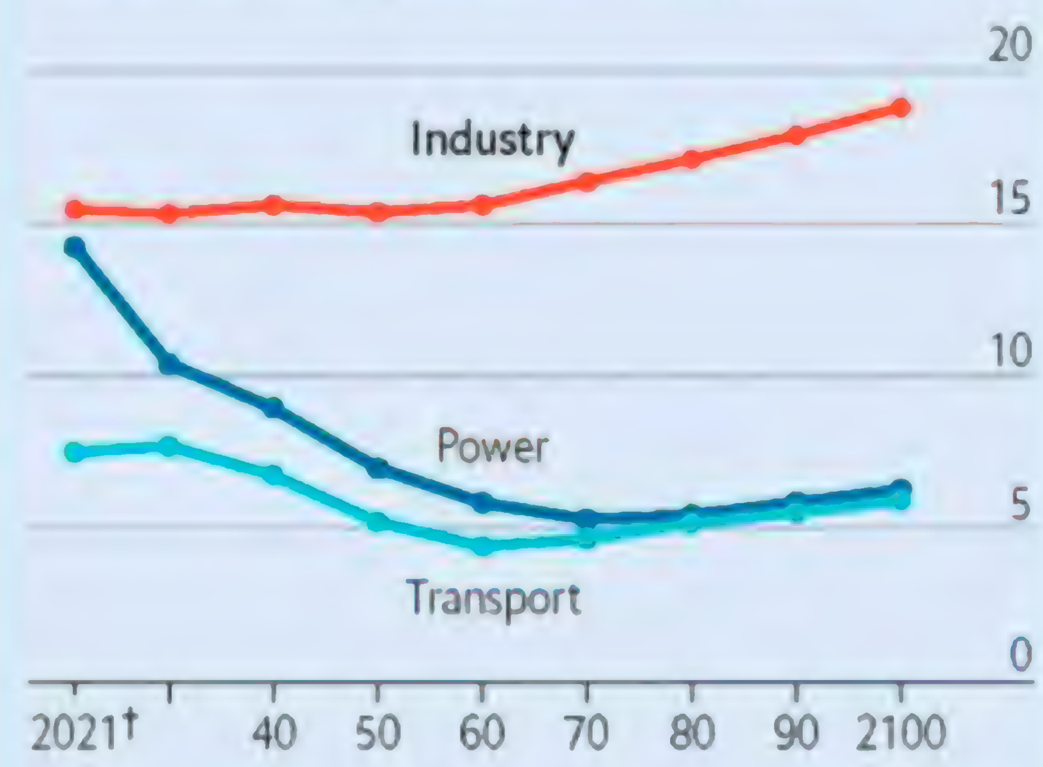
For temperatures of up to 200°C, the technology attracting most attention is not the electric kettle but the industrial heat pump. Heat pumps, like refrigerators, move heat from one place to another. In a fridge the heat is removed from the inside (keeping the contents cooler) and dumped outside (making the kitchen a little warmer). Heat pumps, which are becoming increasingly common for domestic heating, take heat from outside and move it inside. Because the amount of energy needed to move heat this way is lower than the amount needed to heat things up directly, this can lead to big energy savings. And as the technology improves and sales increase, prices are falling.

Some companies are betting that what works in the home can work in the factory, too. One such is AtmosZero, a startup that aims to reduce emissions at New Belgium Brewing, an American beermaker. AtmosZero is installing a heat pump that will soon replace one of the gas-fired boilers at New Belgium's brewery in Fort Collins, Colorado. Like most industrial firms over the past 150 years, New Belgium burns fossil fuel to produce steam, which in its case then heats the ingredients required to make beer. AtmosZero's heat pump will allow it to produce that steam without any burning. Since the electricity used to run the pump will be renewable in the future, that eliminates most greenhouse-gas emissions from the process. It is also more efficient, consuming less energy overall. And because the heat pump transfers warmth to water, just as in a conventional boiler, the equipment can be slotted into

Spot the malingerer 1

Average global emissions* forecasts

Selected sectors, gigatonnes of CO_2 equivalent



Source: Rhodium Group *Energy-related †Actual

New Belgium's existing factory, without the need for a complete overhaul.

Such heat pumps would allow a vast array of industrial processes that require heat of less than 200°C to be electrified, replacing fossil-fuelled dryers, stills, ovens and boilers. Using electricity to run a heat pump can be several times more efficient than using natural gas to heat a boiler. Using hydrogen, in contrast, is less efficient, because making hydrogen by splitting water molecules through hydrolysis powered by green electricity, although emission-free, involves a loss of at least 20% of the energy you started with (see chart 2).

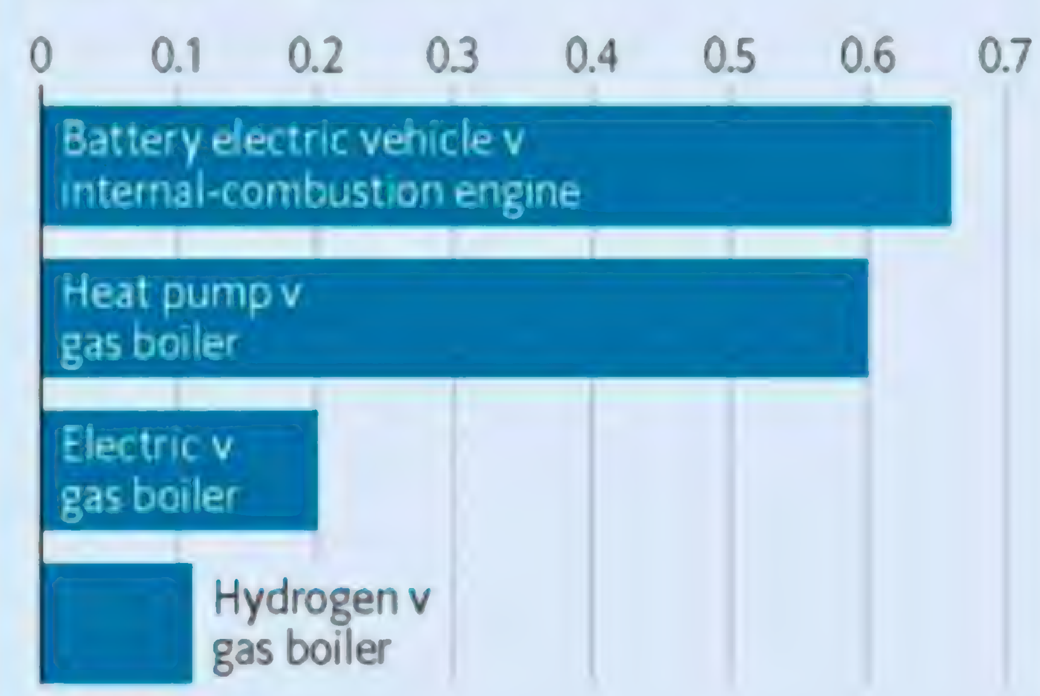
Some industrial heat pumps are in use in Europe and Japan, thanks both to subsidies and to a relatively high ratio of gas prices to electricity prices. Kobe Steel, a big Japanese industrial firm, sells commercial heat pumps capable of producing high-pressure steam at 165°C very efficiently. Heaten, a Norwegian startup boasting investment from the venture arm of Shell, a British oil giant, has developed a durable, low-maintenance heat-pump that can harness waste industrial heat to reach temperatures of up to 200°C. That makes it attractive for industries from pharmaceuticals to textiles that need middling heat.

Even in developing countries in Asia, electrification of relatively low-heat industries is making headway, despite the region's abundance of cheap coal and lack of subsidies, which makes it harder for heat pumps and the like to compete. RMI, a think-tank, calculates that some four-fifths of the increase in industrial electrification globally since 2014 has taken place in Chinese light industries. The IEA predicts that the share of heat used in industry that is generated with electricity will rise from 4% in 2022 to almost 11% in 2028. China will account for almost half of that growth, boosting its use of renewable electricity to generate industrial heat more than five-fold.

Tyres and pumps 2

Emissions cut per kWh of renewable energy consumed relative to fossil fuel alternative

2022, kg of CO_2 equivalent



Source: Ambienta

In America, electrified solutions are making inroads even though natural gas is comparatively cheap. A study published in January by the Renewable Thermal Collaborative (RTC), an industry consortium, finds it costs no more to run a heat pump than a gas boiler when trying to attain temperatures below 130°C. That would make heat pumps competitive for 29% of industrial demand for heat, without any subsidy or technological improvements. The RTC expects heat pumps for temperatures of up to 200°C to become competitive by 2030. Harald Bauer of McKinsey expects that, in time, heat pumps will be able to reach temperatures of 500°C.

For the time being, however, higher temperatures require different technology. "You are looking at the future of industrial energy infrastructure right here!" declares John O'Donnell, the head of Rondo Energy, a startup developing "thermal storage". At first glance, the future does not seem that remarkable: the object of his enthusiasm is a big metal box.

It mainly contains bricks. Wires use electricity to heat the bricks, much as a toaster does bread, to temperatures over 1,000°C. The bricks, helped by extremely effective insulation, can then retain heat for days with only minimal losses. When it is needed, the heat can be released in controlled doses at variable temperatures. Air is blown through channels in the bricks, transferring heat.

Rondo's thermal batteries are cheaper to manufacture than electric ones that require cobalt or lithium. The heat stored is intense enough to power a lot of heavy industry. As with AtmosZero's heat pumps, they can be slotted into existing factories without a complete redesign. And since each battery is so efficient, it can consume electricity to heat the bricks when power is cheapest but dispense heat any time.

The box is generating lots of enthusiasm. Rondo recently raised $60m in financing from the venture-capital arms of such corporate titans as Microsoft, a software colossus, Aramco, the Saudi national oil company, and Rio Tinto. It counts various luminaries of tech investing among its backers. After a widely viewed TED talk

TELL THEM I MADE IT

Hem Moktan earned just $45 over the three years he was concealed as a child laborer in Nepal. He was only a young boy, but the carpets he hand-knotted were sold in fine showrooms across the United States and Europe — until one company partnered with GoodWeave. GoodWeave rescued Hem and provided him counseling, education and a place to live. Now with a master's degree, Hem heads GoodWeave Nepal's child protection program, transforming other children's futures as his was.

Hem made it. You can help other children make it in life too. Look for the GoodWeave® label on carpet and home textile products — your best assurance no child labor was used.

goodweave®
goodweave.org

Design: tabakdesign.com
Photo: The Studio_M – thestudiom.com

and a recent lecture to the great and the good at the World Economic Forum in Davos, Switzerland, Mr O'Donnell chuckles, he is known as "the brick guy".

Mr O'Donnell is planning a big global expansion. With the help of Thailand's Siam Cement Group, an investor with plenty of experience making bricks, Rondo hopes to manufacture enough boxes each year to store 90GWh of electricity—double the capacity of Tesla's "gigafactory" for batteries in Nevada.

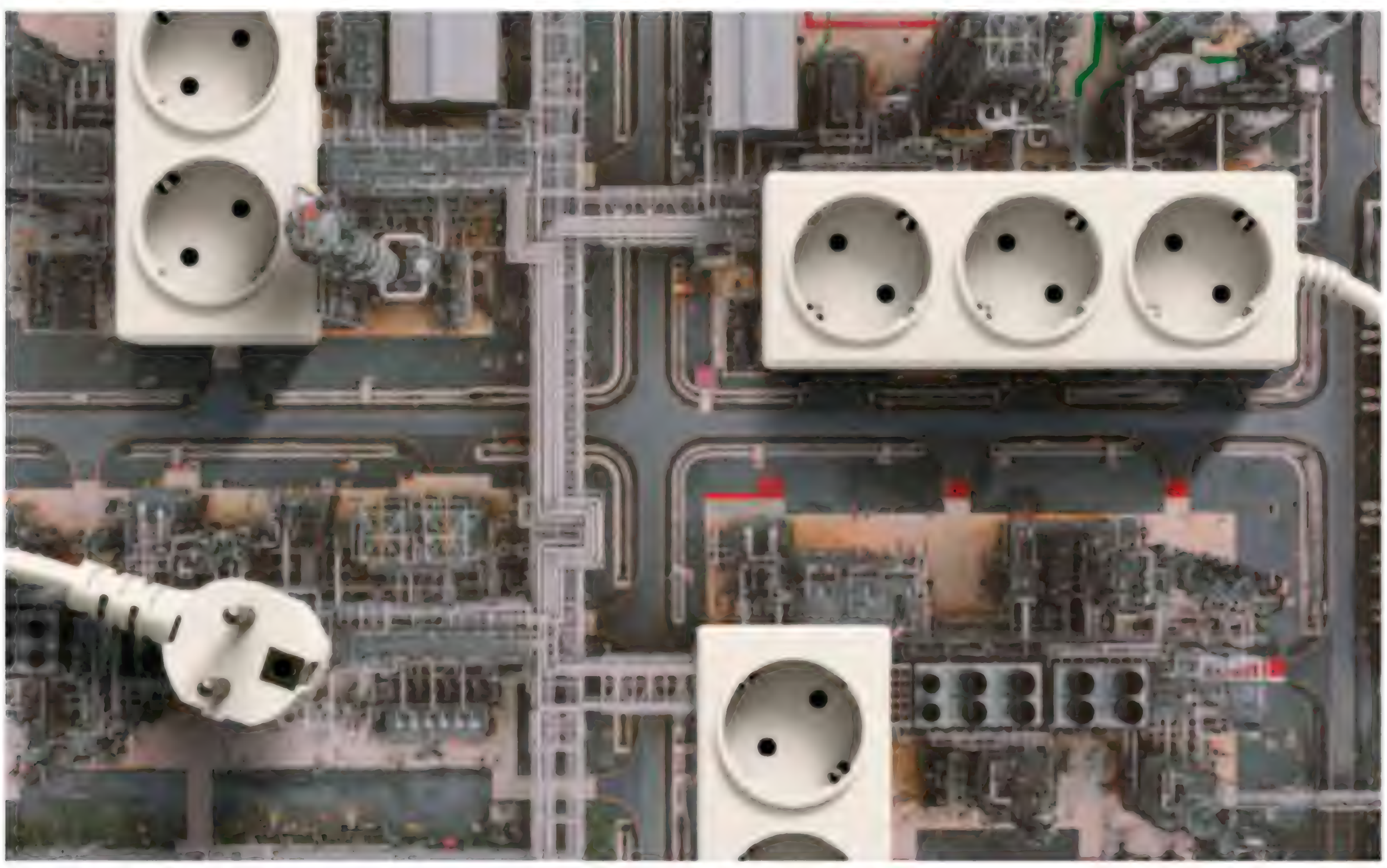
Other companies are developing variations of these "rocks in a box". Brenmiller, an Israeli firm funded in part by the European Investment Bank, uses volcanic rock as a storage medium. Antora, a Californian startup, uses big cubes of solid carbon to store heat as intense as 1,800°C. Boston's Fourth Power uses molten tin flowing through a system of graphite bricks (and graphite plumbing) to provide storage at 2,400°C. Because the tin glows white hot, specialised photovoltaic cells inside the system mean that energy can be withdrawn in the form of electricity as well as heat. In areas with variable power prices, it can run at a profit simply by storing heat when power is cheap and dispensing electricity when the price rises.

The hardest industrial processes to electrify are those that require intense heat around the clock, especially if they use fossil fuels not only to generate heat but also to provide some sort of chemical necessity—such as the carbon used in steelmaking. This is the most experimental end of the spectrum of electrifying industry, but also potentially the most rewarding, since steel, chemicals and cement together account for more than half of industrial heat and thus for a similar proportion of industrial emissions of greenhouse gases.

Several well-funded startups are pursuing radical innovations in aspects of steelmaking, one of the world's most polluting industries. Electra, which is backed by Amazon and BHP among others, has found a way to make pure iron in a fire-free furnace. A picture of Arnold Schwarzenegger's Terminator—who met a molten end in a steelworks—glares down at researchers at its laboratory in Colorado as they dissolve iron ore in a chemical cocktail and zap it with electricity. This "electrowinning" technique produces pure sheets of iron without using any coking coal or fossil fuels and so emitting hardly any greenhouse gases. The firm is chasing rivals including SSAB, from Sweden, which plans to commercialise green steel by 2026.

A more tried and tested method of reducing the carbon emissions from steelmaking replaces blast furnaces with electric-arc furnaces. These typically use electricity to melt and recycle scrap metal, rather than making steel from scratch using iron ore and coking coal. That makes the most sense in places with a carbon price, plenty of scrap and relatively stable demand for steel—rich countries, in other words. In January Tata Steel announced it would shut down blast furnaces and shift to electrified steelmaking in Britain. Wood Mackenzie, a research firm, predicts investment of $130bn in electric-arc furnaces in the coming years. That would allow low-emission steel production, currently 28% of global output, to rise to 50% by 2050.

Cement is another tricky industry to decarbonise because, like steelmaking, its emissions come from the chemical reactions involved, as well as from burning fossil fuels to generate heat. Sublime Systems has found a way to obtain the necessary chemicals without emissions at room temperature, using electrolysis—a process in which chemical reactions are stimulated by running an electric current through a solution. "We are basically replacing the kiln," explains Leah Ellis, the firm's co-founder. Investors including Siam Cement poured in $40m last year.



The third giant, sooty industry is chemicals. One radical form of electrification involves feeding chemical precursors into a super-speedy rotor, spinning at more than 20,000 revolutions a minute. Coolbrook, a Finnish firm, is pioneering this sort of "roto-dynamic reactor". It is backed by Braskem, a Brazilian firm, Cemex, a Mexican one and SABIC, a Saudi one. In December it announced it had used this technique to crack (break down) naphtha, a common process for the industry.

Some chemicals firms are also looking at nuclear power as a source of electricity and heat. Dow, an American one, plans to build four small modular reactors made by X-energy, a startup, at a plant in Texas. These will replace gas-fired boilers that currently provide electricity and steam.

Amping up

Even if such technologies work as advertised, electrifying industry will take time. Frederic Godemel of Schneider Electric, a big French manufacturer of industrial equipment, reckons existing technologies can in theory electrify 30% to 50% of heavy industry. In practice, however, he thinks only 10% is electrified now. That is because, even when new electrical kit is competitive over the long run with existing equipment, factory bosses often resist switching because it involves high upfront costs, disruptive stoppages, training on the new gear and so on.

Carbon pricing or other incentives to cut emissions would obviously help. So do technologies that minimise the disruption. Addison Stark, the chief executive of AtmosZero, has explained that his firm explicitly set out to overcome managers' objections by designing its electric boiler to slot into existing factories easily and so reduce the hassles of installation. "Steam powered the first Industrial Revolution," he declares, "and decarbonised steam will power the next one."

One indication that electrification may live up to its promise is the interest shown by oil and gas companies, whose products the technology is intended to supplant. Equinor, Norway's state-owned oil firm, has long been electrifying its offshore rigs to reduce the emissions involved in pumping for oil. Its most efficient offshore operations emit less than 1kg of carbon dioxide for every barrel of oil produced (or for the equivalent amount of gas) compared with a global average of 15kg a barrel. Oil firms drilling in America's Permian basin, under pressure from regulators to cut emissions, are spending billions to replace conventional equipment prone to leaking methane (a potent greenhouse gas) with electric alternatives. If even the natural enemies of electrification can see its worth, its prospects must be decent. ■

San Francisco

Comeback city

SAN FRANCISCO

Forget the controversy. America's tech capital is building the future

WHENEVER A GLOBAL economic transformation takes place, a single city usually drives it forward. Ghent, in modern-day Belgium, was at the core of the burgeoning global wool trade in the 13th century. The first initial public offering took place in Amsterdam in 1602. London was the financial centre of the first wave of globalisation during the 19th century. And today that city is San Francisco.

California's commercial capital has no serious rival in generative artificial intelligence (AI), a breakthrough technology that has caused a bull market in American stocks, and which many hope will power a global productivity surge. Almost all big AI startups have their headquarters in the Bay Area, which includes San Francisco and Silicon Valley (largely based in Santa Clara County, to the south). OpenAI is there, of course; so are Anthropic, Databricks and Scale AI. Tech giants, including Meta and Microsoft, are also spending heavily on AI in the city. According to Brookings Metro, a think-tank, last year San Francisco accounted for close to a tenth of generative-AI job postings in America, more than anywhere else. New York, with four times as many residents, was second.

This has changed the mood of San Francisco. When you live in the city, you can feel AI in the air. Drive to the airport and every second billboard tells you the various ways in which your business can improve by adopting AI. Go to a party and every second guest says that they are working on the tech or in an industry being transformed by it. Barely a day goes by without some nerdy event to satisfy your curiosity about the world's liveliest intellectual field, from talks about the philosophy of artificial general intelligence to MLHops, a meet-up for AI folk who like beer.

How is this happening somewhere supposedly falling apart? Even before the covid-19 pandemic there was a sense that the best days of San Francisco and the wider Bay Area had passed. In the late 2010s worries about crime and rising taxes saw other cities, including Austin, Los Angeles and Miami, hyped as the "next Silicon Valley". According to data compiled by PitchBook, a financial database, at the start of 2014 firms in the Bay Area attracted four times more venture funding than New York, the next-biggest metro area. By the end of 2020 they attracted only 2.5 times as much.

Covid made the situation considerably worse. San Francisco locked down early, hard and for a long time, crushing employment in service industries. The city's tech elite realised that they could work from home, emptying downtown. After the murder of George Floyd in 2020, many in city government turned against the police. Officers felt the city no longer had their back. From 2019 to 2022 their numbers fell by 14%. In 2021 Elon Musk left for Texas, the richest of the many thousands who vacated San Francisco that year.

Action in startup-land moved elsewhere, too. The hottest companies were foreign, such as Ant Group, a Chinese fintech firm, at least until it was forced to ▸▸

→ Also in this section

abandon plans to go public, and Grab, a Singapore-based ride-hailer, which listed at a valuation of $50bn. Venture dealmaking in San Francisco inflated along with a wider market bubble. But when interest rates rose in 2022, the industry shut down. Valuations of venture-backed firms halved from the end of 2021 to the end of 2022.

Across the world "San Francisco" is now shorthand for a failed city. Drug overdoses and homelessness have soared; the city's population fell by 8% from April 2020 to July 2022. Just 52% of Americans polled by Gallup last year viewed San Francisco as a safe place to live, down by 18 percentage points from 2006. Conservatives, in particular, see the city as an example of what happens when you let social-justice warriors run amok. Today, if you so choose, you can drive through red lights at high speed with impunity—police have almost completely stopped issuing traffic citations as they prioritise other crimes. More than 30% of offices are vacant. Market Street, the city's main drag, has an astonishing number of empty shops.

There are now signs that the local quality of life is starting to improve: overdoses have begun to fall; in the final months of 2023 car break-ins halved. Yet the start of the AI boom predated these changes. Despite headlines about an exodus of the rich, San Francisco's tech elites mostly weathered the storm—its population decline was, in fact, mostly driven by the exit of poorer folk. As a result, inhabitants are now better paid and more educated than before covid. According to official data, San Franciscans' average personal income per year is more than twice the American average. Even as poor residents have left, income inequality has soared.

Many of the people with the skills to ride the AI wave were already in San Francisco or nearby. Most of today's tech giants were founded in the suburban neighbourhoods that make up the Valley. Today they, and other big tech firms, have huge campuses 20 or 30 miles south of San Francisco, but their young employees rent cupboard-sized flats in the city. Much of the funding for the AI boom is coming from these tech behemoths. In 2022 and 2023 firms such as Meta completed more Bay Area-based venture-capital investments than ever before, largely focused on AI.

Sitting at the top in the Bay
GDP per person, 2020 or latest, $'000
Selected cities

Source: OECD *Île-de-France

Owing to a mixture of government support and creative counterculture, Stanford University and the University of California, Berkeley have long been centres of AI excellence. In 2017 eight people published a paper, "Attention is all you need", while working in the Bay Area at Google. It has become known even outside AI circles as the groundbreaking contribution to the current wave of technological progress. By 2021 San Francisco and nearby San Jose accounted for a quarter of all conference papers on the topic, according to the analysis by Brookings Metro.

Academic excellence has fed private-sector innovation, with many researchers moving between the two spheres. Nine were hired to build OpenAI. At first, they laboured in the apartment of Greg Brockman, one of its co-founders, in the Mission District. Data from LinkedIn, a job-search platform, suggest that one in five of OpenAI's engineering staff in America attended Berkeley or Stanford. Now San Francisco's AI concentration has reached a critical mass, with success begetting further success. London and Paris may be AI rivals, but they are a long way behind.

Thus investors are again spending big in the Bay Area. Venture funding to San Francisco-based startups halved between 2021 and 2022, but recovered to two-thirds of its peak in 2023. By contrast, in Miami just a quarter as much funding went to startups in 2023 as in 2021. Finance types who once worked in Silicon Valley are moving into the city to be closer to the action. Y Combinator, which helps startups get off the ground, recently set up shop. Venture-capital firms from General Catalyst to Pear VC have opened new offices.

In desirable neighbourhoods competition for rental properties is fierce, as the city's population once again grows. The arrival of lots of well-paid tech types has boosted house prices. Although they fell by more than 12% from their pandemic highs, they have risen since the start of 2023. The city has fewer restaurants than in 2019, but about the same number with two or three Michelin stars. North of the city, in wine country, there is no shortage of new, expensive hotels at which venture capitalists and founders can relax.

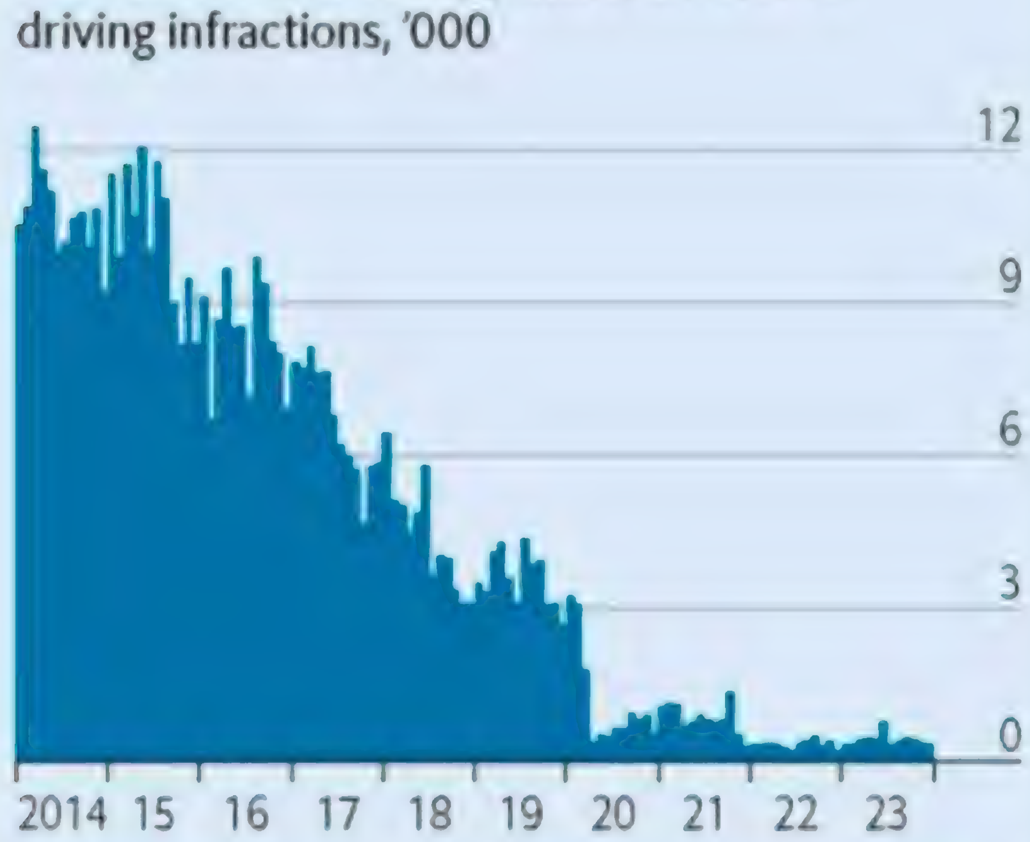
Some elites see San Francisco's AI success as a precursor to a broader transformation of the city. Locals are fed up with having to call 911 because someone is overdosing in front of their children. In 2022 they ousted Chesa Boudin, a progressive district attorney, and three members of the school board who were more concerned with renaming schools than reopening them. On March 5th they will vote on measures championed by moderate Democrats, including one that will try to get homeless people suffering from mental illness off the streets. In November they will choose a raft of local officials and perhaps whether to give the mayor more power.

London Breed, the current office-holder, sounds genuine when she talks of the need to improve public safety and cut red tape: "Rather than being a city that says 'no' all the time," she explains, we need "to get to 'yes' by getting rid of bureaucracy." She is being pushed by political groups that have formed as tech types take a keener interest in local politics, including GrowSF and TogetherSF, the latter co-founded by Michael Moritz, a famed venture capitalist.

Defending the indefensible

These efforts face stern resistance. Aaron Peskin, president of the Board of Supervisors, the city council, is the de facto leader of San Francisco's progressives. He argues that Mr Moritz and his fellow campaigners are "amateurs" who are dressing up their own elite interests in the language of reform. "I generally think that people believe their own bullshit," he says. (Unsurprisingly Mr Moritz disagrees: "It'd be easy for us to pick up roots and...go to a low-tax

Mad Max
San Francisco, monthly penalty notices for driving infractions, '000



Sources: San Francisco Police Department; City of San Francisco

Centre of the AI universe
United States, venture-capital investment*
% of top ten metro areas

Source: PitchBook *Four-quarter moving average

state or go to Europe.") Even today plenty of the city government's time is wasted on pointless projects such as deciding whether or not to call for a ceasefire in Gaza. The local NIMBY movement is extremely powerful. And cartoonish corruption remains a problem: in 2022 the former director of public works was sentenced to seven years in prison for taking huge bribes.

Yet it may not matter much to the AI boom if San Francisco remains chaotic. If you want good public schools, public transport or public safety, San Francisco is not for you. If you do not need these things, or you can buy your way around them, then the city remains a great place in which to innovate. Covid tested the "network effects" that people in Silicon Valley believed were crucial to its success. It turned out they were as powerful as ever. That founders, firms, money and workers are returning to San Francisco suggests that remote work has not killed their importance. The city is still the place to be if you want to meet a co-founder by chance at a party.

Can the AI-driven excitement last? For now it is attracting people to the city; in time, it could cut the workforce needed for startups. "With AI you might not need 50 developers to start a firm—maybe you just need five," speculates Auren Hoffman, a founder who moved from San Francisco to Washington, DC a few years ago. Another risk is that the AI boom will amount to less than the bulls hope, perhaps because fewer-than-expected businesses adopt AI tools. Yet as real as these concerns are, they are also ones that just about every other city would love to face. When it comes to governance, San Francisco breaks all the rules. At the same time, it is the richest place on Earth, and getting ever richer. ■

Buttonwood Green haze

Investing in commodities has become nightmarishly difficult

ONLY A FEW years ago, analysts and investors were aflutter with talk of a new "supercycle" in commodities. Some believed the world was about to repeat a surge in raw-material prices that began in the early 2000s, and lasted until the global financial crisis of 2007-09. This time the prompt was meant to be a mixture of a fast economic recovery, as the West emerged from covid-19 lockdowns, combined with a shift to green energy.

Today the thesis looks far less certain. Prices of lithium and nickel, which are vital for electric-vehicle (EV) batteries, exploded in 2021 and 2022, but have since collapsed. Nickel is almost 50% cheaper than at the start of 2023. Lithium's fall has been even steeper: its price is down by more than 80% over the same period. The Bloomberg Commodity Index, made up of a basket of foodstuffs, fuels and metals, has declined by 29% since its peak in mid-2022.

Forecasts for oil demand now vary wildly, too, depending on assumptions about governments' plans to wean consumers off the stuff. The International Energy Agency expects demand for oil to increase to 106m barrels per day (bpd) by 2028, up from 102bpd last year, and global demand to peak not far above that level. The Organisation of the Petroleum Exporting Countries, a cartel of oil producers, expects demand to rise more than twice as fast in the next five years, to 110m bpd, and then to keep rising for at least the next two decades.

Commodity trading has never been simple: prices depend on unpredictable economic cycles, as well as the production capacity of drillers, growers and miners. But it is now nightmarish. On top of such concerns, investors have to contend with a barrage of political and technological uncertainties, which range from developments in battery tech to government appetite for subsidies. And it is these questions that will govern the pace of the green transition.

Start with the EV market. It is clearly still growing: 14m EVs were sold worldwide in 2023, a 35% increase on the previous year. But how fast will it continue to grow? Both new and used EVs are sitting in American dealerships for longer than their petrol-powered rivals. Volkswagen, a German automaker, reports that EVs made up 8-10% of sales in 2023, down from 11% the year before. Ford and GM are among the carmakers to have delayed EV- and battery-plant construction over the past year. Wariness about the sector is dragging on the share price of Tesla, the market leader, which is down by 26% this year. And will EVs still need the same battery materials? New sodium-ion batteries require neither nickel nor lithium. If they begin to supersede existing types, demand for the metals will plummet.

Political considerations are also increasingly difficult to track, since the direction of travel is no longer one-way.

Politicians across the rich world have started to worry about the costs involved in the energy transition. In September Britain delayed a ban on internal-combustion engines. Ahead of elections to the European Parliament in June, the draft manifesto of the centre-right European People's Party now opposes an outright ban on such engines. Are these just cosmetic changes or the start of a deeper shift in green policies? Commodity investors need an answer.

Nor is it only Western policies and demand that matter. During the last commodity supercycle, China's construction of millions of flats, hundreds of thousands of miles of roads and all manner of other physical infrastructure kept demand for hard commodities growing fast. Now demand from the world's second-largest economy is much less certain. Chinese economic growth has slowed considerably, and investment in property has slumped as the government attempts to steadily deflate a bubble of its own creation. At the same time, copper prices have proved to be astoundingly resilient, dipping just 9% during the past 12 months. This reflects China's push for self-sufficiency in energy, including in solar and hydro power.

Pity anyone whose job it is to forecast how these factors will play out over the next 12 months: if getting an accurate sense of the trade-offs in Western politics is tough, divining the approach of an increasingly cloistered Chinese government is close to impossible. It is clear that old methods of reading commodity markets are no longer sufficient. Without an understanding of the demand for new vehicles, the technology inside them and the politics of net-zero, any bets on the future of commodity markets will be little more than guesswork.

The world economy

Putting out fires

War, high interest rates and financial strife are yet to bring down growth

CENTRAL BANKS have embarked on austere monetary policy to crush inflation. Worries about the financial system, from bond markets to commercial property to the health of the banks, are ever-present. Some 4bn people will head to the polls this year, with unpredictable consequences. Most concerning of all, the world is on fire, with conflicts from Ukraine to Israel and the Red Sea. Other wars, not least in Taiwan, do not feel all that far away. Little wonder that analysts speak of "polycrisis", "hellscapes" and a "new world disorder".

And yet, for the moment at least, the world economy is laughing in the face of these fears. At the start of 2023 almost all economists reckoned that a global recession was due that year. Instead, global GDP grew by about 3%. The early signs suggest progress is continuing at the same rate this year. Data from Goldman Sachs, a bank, indicate that global economic activity is about as lively as it was in 2019. A measure of weekly GDP produced by the OECD, a club of mostly rich countries, finds similar results. And a measure of global activity produced from surveys of purchasing managers (so-called PMI data) points to strongish growth across the world.

Labour markets are even stronger. The unemployment rate across the OECD remains comfortably below 5%. The share of working-age folk actually in a job, a better measure of labour-market strength, is at an all-time high. Healthy job markets are boosting family finances, which have been hit by inflation. Real household disposable incomes across the G7 shrank by 4% in 2022, but are now growing once again.

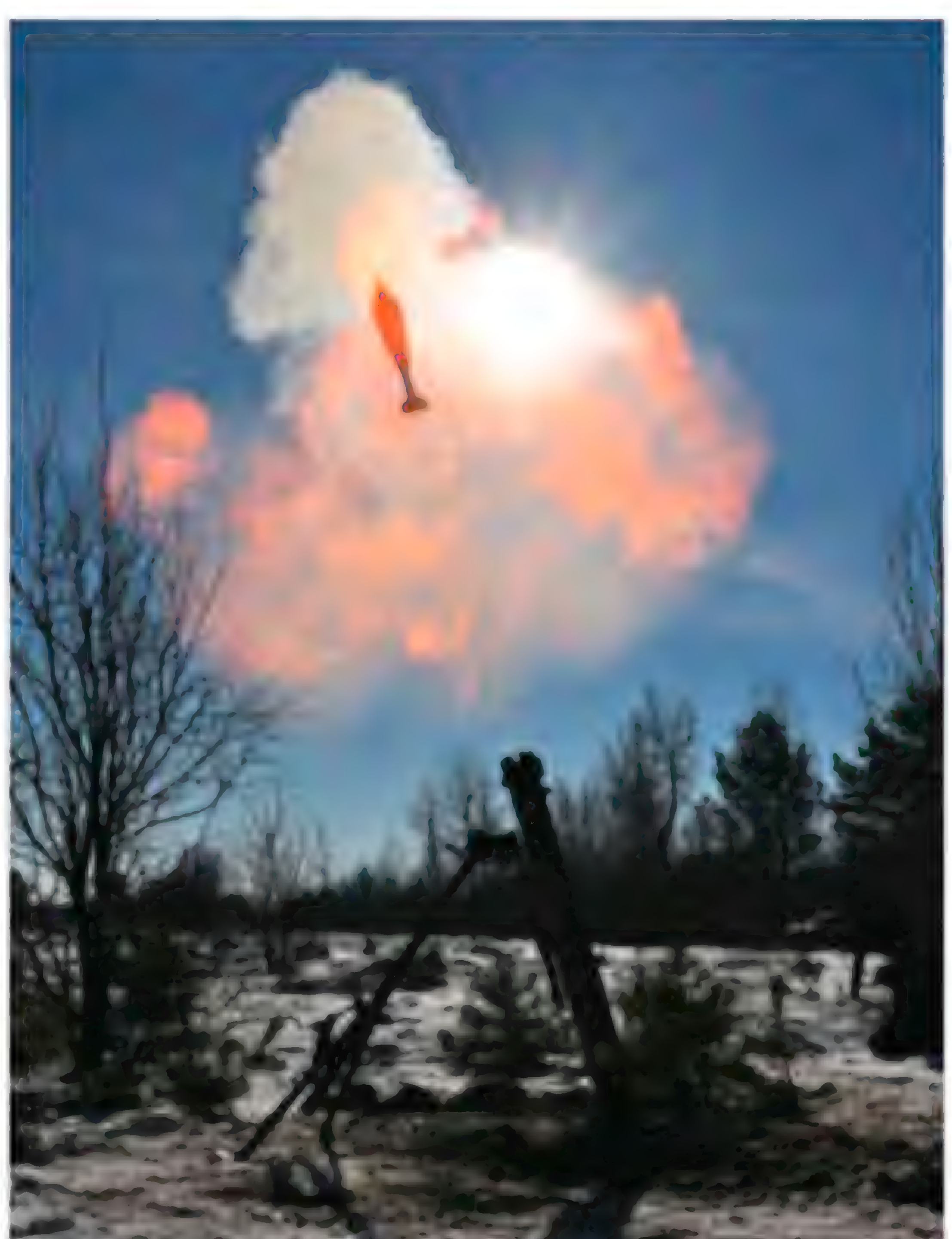
True, some countries are doing less well. Chinese growth figures continue to disappoint. Some of those coming out of Europe are concerning. Germany, facing fallout from recent high energy prices and competition in its car industry from Chinese electric-vehicle exports, may be in recession. But there are also stronger showings. In January total nonfarm payroll employment in America rose by 353,000—a blowout figure, surpassing almost all expectations. In Brazil, a country that has faced a number of years of weak growth, the latest PMI data are encouraging.

So far there does not seem to be much evidence that attacks on shipping in the Red Sea are capsizing the economy. PMI data suggest that manufacturers face longer delivery times. This is consistent with ships rerouting around the Cape of Good Hope, which increases the length of a trip between Shanghai and Rotterdam to 23,000km, from 18,000km. However in almost all economies shipping costs are just a tiny fraction of the overall price of a good. Even the most pessimistic wonks are pencilling in a rise in inflation, because of the Red Sea disruption, that amounts to little more than a rounding error.

Why is the global economy so oblivious to the new world disorder? High interest rates have managed to bring down inflation from a peak of more than 10% across the rich world to about 6%. This not only raises households' purchasing power; it also raises their spirits. Indeed, having hit an all-time low in 2022, rich-world consumer confidence has risen sharply. Higher borrowing costs have been muted by the fact that a lot of household and corporate debt is on fixed interest rates.

There is also a more intriguing possibility: after so many shocking global developments, the world no longer minds chaos as much as it once did. This is consistent with academic evidence, including a recent paper by two researchers at the Federal Reserve, which suggests that the hit to output from a spike in economic uncertainty fades after a few months.

Good economists remain vigilant. Higher interest rates may have a delayed impact on growth. Escalation in the Russia-Ukraine war or the Red Sea could provoke another round of shocks to energy supply, feeding into inflation. All bets are off if Xi Jinping decides to move on Taiwan. Yet on the flipside, falling inflation and a potential boost to productivity from generative artificial intelligence could prompt GDP to accelerate. Moreover, the global economy has already demonstrated its resilience. Polycrisis, what polycrisis? ■



Soaring rockets, not inflation

Conflict arbitrage

Ukraine's aid

Why energy firms are storing billions of cubic metres of gas in a war zone

EUROPE HAD weathered one winter since Russia's invasion of Ukraine in 2022. But although gas prices had returned to Earth, they were sure to rise in the colder months to come. Thus if commodity merchants bought at rock-bottom rates in the summer, they could offer future delivery at much higher prices on the forward market. To make the deal work, all they needed was somewhere to store the product. The EU's underground capacity was almost full; parking the gas in tankers offshore would have been expensive. Their solution was unorthodox: pumping 3bn cubic metres (bcm) of natural gas eastward to Ukraine.

Stashing hydrocarbons in a war zone might seem ill-advised. Indeed, last spring analysts assumed that companies would require publicly guaranteed war insurance in order to risk such a trade. But by June the spread between summer and winter prices had widened enough that the gamble seemed worthwhile. Ukraine's generous customs regime for short-term storage, combined with promises that gas would not be requisitioned under martial law, provided traders with extra incentive. The resulting trade helped keep the EU's reserves stocked throughout this winter, suppressing gas prices across the continent. It also provided healthy profits for the firms involved. Akos Losz of Columbia University estimates that merchants made up to €300m ($320m) from the play.

Now the trade is looking like a test run for Europe's future energy strategy. Ukraine is home to the continent's second-largest gas-storage capacity, after Russia, totalling nearly 33bcm. It has more storage space than big economies like Germany, which boasts around 24bcm, and dwarfs that of next-door Poland by a factor of ten. Having mostly been developed as part of the Soviet Union's energy infrastructure, the facilities massively exceed Ukraine's domestic needs. Both the EU and the Ukrainian government are keen to put them to work. Denys Shmyhal, Ukraine's prime minister, has said that he wants to turn his country into Europe's "gas safe". Naftogaz, a state-owned energy company, has offered up to half its storage space to European energy firms. Traders are now poised to repeat last year's trade at bigger volumes this spring, starting from an earlier date.

The firms involved in the trade have kept quiet, partly for security reasons. Trafigura, a commodities giant, is the only one ▸▸

whose involvement has been confirmed, but Naftogaz reports that more than 100 European companies have made use of its storage sites. According to Natasha Fielding of Argus Media, an energy-information firm, these include "large energy companies with trading desks and smaller, local utility firms in eastern Europe". The latter, she says, could have the most to gain from the arrangement. Countries including Moldova and Slovakia not only lack significant storage capacity of their own, but also remain heavily dependent on Russian gas, which is still delivered through Ukraine under a long-term transit agreement due to expire in December.

Although Europe's energy problems have become less acute, storage provides a hedge against future disruption. Ukraine is eyeing the future, too. The country still receives up to $1.5bn a year from Russian companies, which use its pipelines to deliver gas under the existing transit deal. Once that agreement lapses, the government intends to make up some of the shortfall using storage fees paid by Western firms. There is also another consideration for Ukraine's leaders. The more they can integrate their country's energy industry with European markets, the more invested the EU will be in their defence. At a time when support from their allies appears shaky, that is worth quite a lot. ■

American banks

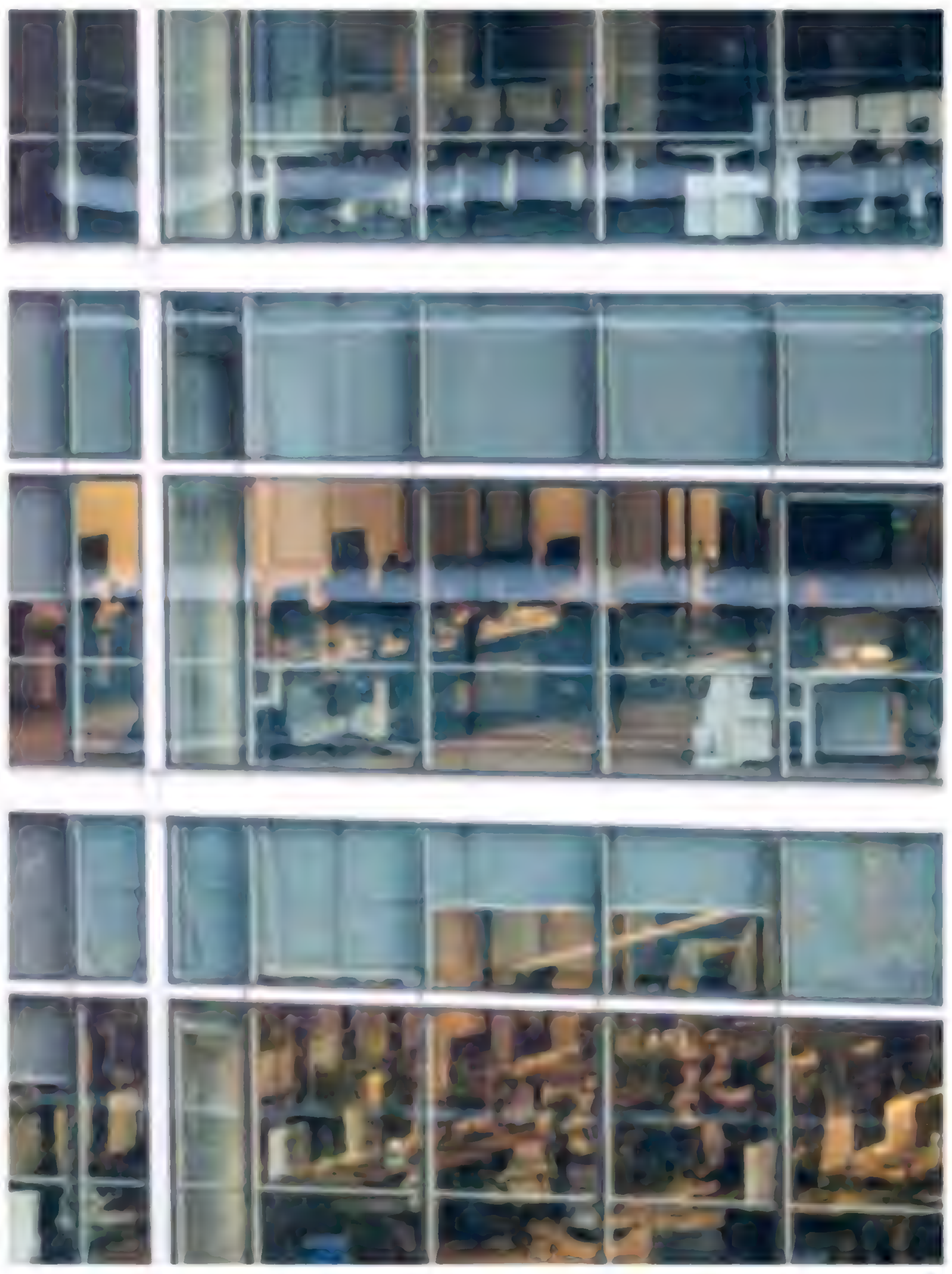
The financial crisis to come?

NEW YORK

How worried to be about empty offices

IN MIDTOWN MANHATTAN reminders of commercial property's difficulties are everywhere. On the west side, near Carnegie Hall, stands 1740 Broadway, a 26-storey building that Blackstone, an investment firm, bought for $605m in 2014—only to default on its mortgage in 2022. Soaring above Grand Central station is the iconic Helmsley building. Its mortgage was recently sent to "special servicing" (it may be restructured or its owner may simply default). As the sun sets, the underlying problem becomes clear: working from home means fewer tenants. Floors bright with lights, where workers potter about, sit sandwiched between swathes of black.

This is not a new development. Many buildings have stood empty since covid-19 struck. At first, owners hoped to wait out the pandemic, but workers were slow to return, so employers ended up downsizing. Vacancy rates, especially in shabbier buildings, rocketed. Then interest rates rose.



Spot the problem

Most commercial buildings are financed via five- or ten-year loans. And many of these loans will be refinanced shortly, while rates remain painfully high. Some $1trn in American commercial-property loans will roll over in the next two years, an amount that represents a fifth of the total debt owed on commercial buildings.

Recently a number of office buildings in big cities have traded at less than half their pre-pandemic prices. These sorts of losses will wipe out many owners' equity, leaving banks to swallow hefty losses of their own. Indeed, three institutions have already been hit hard. In recent weeks New York Community Bank (NYCB), a midsized lender; Aozora Bank, a Japanese institution that hoovered up American commercial-property loans; and Deutsche Pfandbrief, a German outfit with exposure to offices, all reported bad news about their loan books and saw their shares plummet.

Meanwhile, China's property crisis is becoming more acute. With domestic portfolios struggling, some Chinese investors, who have bought property all over the globe, may need to raise cash—and could start dumping overseas assets, depressing property values. If consumers start to seriously struggle with rising interest rates on auto loans or credit cards, it is possible more institutions will end up in a similar situation to that of NYCB. Little surprise, then, that people are starting to fret that the move to working from home could end up causing a financial disaster.

It is worth putting these problems into context, however. For a start, the troubles at NYCB really do seem specific to the institution. Although the bank has exposure to New York offices, it in fact wrote down the value of its portfolio of loans on rent-stabilised "multi-family" apartment blocks in the city. These plunged in value after legislation in 2019 restricted the ability of owners to raise rents if an apartment was vacated, or if the landlord made capital improvements. The other lender that specialised in these sorts of loans was Signature Bank, which failed last year (after which some of its assets were bought by NYCB).

Moreover, there is a limit to how big a problem offices can pose, even if the damage to them is severe. The total value of American property (not including farmland) was $66trn at the end of 2022, according to data from Savills, an estate agency. Most of that is residential. Only a quarter is commercial. And commercial property is much more than just offices. It includes retail spaces, which are struggling, but also warehouses, which are in demand as data-centres and distribution points, and multi-family buildings. Offices are therefore worth perhaps $4trn, or about 6% of the total value of property in America.

Between 2007 and 2009 residential real estate in America lost a third of its value. A similar shock today would wipe $16trn from property values. Even if every office building in America somehow lost its entire value, the losses would still be just a quarter of that size. On top of this, lenders are better protected against losses in commercial property than they were against those in the residential sort. Whereas loans for the latter were often close to 100% of a home's value, even the most ambitious commercial-property loans tend to cover just 75% of a building's value.

Bloodshed

The wound inflicted on the financial system by commercial property is best likened to that caused by a slip of a kitchen knife—it is nasty, obvious and painful. Stitches might be required. But it is unlikely to grievously injure the victim.

Nor will the wound fester unnoticed. Because property problems are so visible, regulators are all over them. About half of commercial-property debt is loans from banks (and mainly from smaller ones, since rules discourage large institutions from such lending). The rest is securities or loans from insurers. The Office of the Comptroller of the Currency, a regulator, reportedly advised NYCB to write down the value of some of its loans more aggressively, making them obvious when it reported earnings on January 31st. Across the pond, the European Central Bank has asked banks to set aside extra reserves to cover loan losses in commercial property.

America's strong economy offers extra protection. Look up at New York's skyscrapers and it is easy to feel alarmed. But cast your gaze back to street level and you can calm yourself. The streets are bustling. Shops are packed. Restaurants are full. America is on the move, even if it could do with a bandage for that nasty cut. ■

Free exchange | Inflated worth

In defence of a financial instrument that fails to do its job

ALTHOUGH BUYING inflation-protected bonds to protect against inflation does not seem unreasonable, it would have been a spectacularly unprofitable move during the latest bout of inflation. One hundred dollars put into inflation-protected Treasuries in December 2021, when investors first saw American core inflation reach 5%, would have been worth just $88 a year later. Even cash under the mattress would have done better.

Safe to say, inflation-linked bonds are in trouble. Investors pulled $17bn from exchange-traded funds tied to them last year. Canada announced plans to cease issuing them in 2022; Germany did the same in November. Sweden is considering its options. Yet these countries are making a mistake. So long as their purpose is not misconstrued, inflation-linked bonds serve a vital function for markets and the governments that issue them.

Why, then, do the bonds not always offer protection against inflation? Start by breaking down the sources of return for a bondholder. First comes coupons, payments received before a bond matures. The difference between inflation-linked bonds and their conventional counterparts is that these are not fixed in dollars, euros or pounds; instead, they rise with inflation, as does the bond's principal. Their real value is preserved if inflation is unexpectedly high. So far, so inflation-protective.

Yet for many investors a second mechanism will matter: changes in a bond's price. Such changes reflect shifts in the market value of the future payments to which a bondholder is entitled. Here, a snag emerges. Real interest rates determine the present value of that future money: when rates rise, bond prices fall. And as was made painfully clear during 2022 and 2023, few forces raise long-term real rates as sharply as a central bank ferociously tightening monetary policy. Most of the time, this second mechanism matters more for inflation-linked-bond returns than the first. Indeed, it is what caused the $12 loss an investor would have made between December 2021 and December 2022.

Although they do not always protect against inflation, the bonds do serve a wider purpose. For markets, their main value is isolating (and pricing) beliefs about economic concepts. Conventional bond yields package together two distinct forces: inflation expectations and real interest rates. Inflation-linked bonds disentangle them: their yield more cleanly expresses the market's pricing of real interest rates. Likewise, the gap in yields between a nominal bond and an inflation-linked one gives the market's pricing of expected inflation, known as "breakeven inflation".

Separating these concepts matters. For speculators, doing so means a more straightforward way to trade on macroeconomic pressures. For market observers, making real interest rates visible and tradable helps explain the pricing of almost any other financial asset. One way to view stocks, bonds and property is as a way to buy future payouts (dividends, coupons and rent, respectively). Each has real interest rates embedded in its price. And for central bankers, breakeven inflation offers a constantly traded measure of whether markets find their inflation targets credible.

In fact, with appropriate caveats, inflation-linked bonds do even offer some inflation protection. They can outperform if inflation rises and central banks fail to raise rates in response, as in 2021 when most central bankers valiantly insisted that inflation was transitory. Shorter-duration inflation-linked bonds can provide payouts with lower exposure to rising interest rates, a bet that can be magnified with leverage if a speculator wishes. And long-term investors, such as pension funds, that hold the bonds to maturity are not much affected by fluctuations in a bond's market price. Locking in inflation-linked cashflows helps them offset liabilities that are often also indexed to inflation.

For bond issuers, this poses a trade-off. Pension funds and other risk-averse investors' appetite for inflation-linked bonds means they may pay a premium for them. But other buyers may demand a discount because, with pension funds uninterested in selling, inflation-linked-bond markets are relatively illiquid. The empirical evidence on which effect dominates is spotty at best. Policymakers have reached varying conclusions. In 2012 analysis by New Zealand's Debt Management Office prompted a ten-fold increase in the country's inflation-linked bond issuance as a share of total issuance over the next decade. A study in 2017 for the Dutch government concluded the opposite: that limited liquidity made inflation-linked bonds more troublesome than helpful.

Certainly there have been instances where governments have saved a great deal of money by issuing inflation-linked bonds. Britain's first such bond issue in 1981 coincided with an 800-year high in British inflation. Whereas its price reflected expected annual inflation of 11.5%, it eventually paid out a realised inflation rate of just 5.9%. Recently, however, luck has run in the opposite direction for Britain and most other rich-world bond issuers. Spiking inflation has pushed up the coupon payments governments owe and prompted concern about rising debt bills.

Sometimes, therefore, the bond issuer will win and sometimes it will lose. But in the long run the odds are in its favour. That is because inflation-linked bonds shift inflation exposure from bondholders to issuers, and markets offer compensation for those willing to take on risk. Moreover, it is risk that governments are well-placed to assume: high inflation tends to mean a higher nominal tax take, and more money to pay down debt.

Forget bitcoin and gold

One question remains. If not inflation-linked bonds, what should an investor who was worried about rising prices have held in late 2021? Stocks performed worse, even if they bounced back, as did bitcoin. Gold and oil, however, held their value. A better trade still might have been to bet on the price of bonds falling—including those that are inflation-linked. ■

Lunar exploration

Hard landings

Will the latest private Moon mission succeed where others have failed?

LANDING ON THE Moon is difficult. Of the five robotic landers that have made the attempt in the past year, only two succeeded. Both successful landers were sent by national space agencies—those of India and Japan—though the Japanese probe, called SLIM, suffered an engine failure and landed upside down. *Luna 25*, a lander sent by Roscosmos, Russia's space agency, collided with the lunar surface after going into the wrong orbit. Two landers from private companies also failed: *HAKUTO-R*, sent by a Japanese firm, crashed during landing, and *Peregrine*, made by Astrobotic, an American company, suffered a propellant leak and never made it to the Moon.

As a result, all eyes are now on *Odysseus*, another private lander which set off for the Moon on a SpaceX Falcon 9 shortly after 6am GMT on February 15th. All being well it should land within eight days.

Built by Intuitive Machines, another American firm, *Odysseus* is, like Astrobotic's ill-fated *Peregrine*, part-funded by America's space agency, NASA, as part of its "commercial lunar payload services" (CLPS) programme. This involves NASA acting as an "anchor tenant" on commercial landers and buying several payload slots, rather than building and operating such vehicles itself. Intuitive Machines is contracted under CLPS to send three landers to the Moon, of which this is the first.

Intuitive Machines is aiming to land *Odysseus* near the Moon's south pole, an area never visited before and deemed rich with promise because of the presence of frozen liquids and gases in some of its craters. Those deposits are of great interest to scientists and may also be of practical use, providing water or rocket fuel to future lunar bases and the rockets launching from them. The planned landing site is near a crater called Malapert A, close to many of the candidate landing sites for NASA's proposed Artemis III mission, which is intended to take humans back to the Moon later this decade.

But if all goes well, a successful lunar landing by *Odysseus* would not just be the first by a private company. It would also be the first soft landing on the Moon by an American-made spacecraft since the Apollo 17 mission of 1972, the last time astronauts visited.

So there is a lot riding on *Odysseus*—both figuratively and practically. The two-tonne lander, roughly the size of a telephone box, is carrying six NASA payloads that are intended to pave the way for future human visits and a potential long-term presence. Five of NASA's instruments will test various navigation and landing technologies. The sixth will assess the Moon's potential as a site for radio astronomy, as well as the challenges of radio communication from a location where Earth is always low on the lunar horizon.

The probe is also carrying six commercial payloads, including ILO-X, which will test astronomical imaging equipment for a ▸▸

future lunar observatory; EagleCam, a "selfie" camera intended to detach from the probe just before it touches down, letting it snap its own landing; and a set of tiny sculptures by Jeff Koons, an American artist, called "Moon Phases".

A large number of things have to go right for the landing to succeed—and the failures of other recent lunar missions demonstrate the sheer variety of ways in which things can go wrong. Sometimes the problem is software-related: HAKUTO-R failed last April because its navigation software was confused by the unexpectedly high rim of a crater near the landing site. Assuming that the probe was close to the surface, the software initiated a low-speed powered descent. In fact the probe was 5km above the lunar soil, and soon depleted its fuel supply, after which it fell to the surface and was destroyed.

In other cases, hardware is at fault. *Luna 25* crashed in August because its engine failed to shut down correctly while it was manoeuvring into a pre-landing orbit, putting it instead on a collision course with the Moon. *Peregrine*'s propellant leak last month seems to have occurred after a valve failed to close properly, causing a build-up of pressure and a rupture in its oxidiser tank. As a result, it had insufficient fuel to complete its mission, and burned up in Earth's atmosphere on January 18th.

The following day, the SLIM probe lost one of its two engine nozzles in the final seconds of its descent to the lunar surface, but its software was smart enough to compensate, bringing it to a soft landing within 55 metres of its target—astonishingly close for a mission to a different world. However, instead of landing on its side as intended, SLIM tipped over onto its nose, ending up with its engines pointing upward and leaving its solar panels in shadow. SLIM's controllers shut the probe down to conserve power, but were able to power it up again nine days later, when the Sun was at a more suitable angle.

The fate of SLIM shows that mishaps need not always lead to mission failure. Its troubled landing was nevertheless the most precise in spacefaring history, demonstrating the potential of its novel vision-based navigation system. And, scientific achievements aside, the mission also made Japan the fifth country to have soft-landed a craft on the Moon.

Whether *Odysseus* succeeds or fails in the coming days, many other private landing attempts are planned for later in 2024. NASA has several CLPS missions lined up: at least one (and possibly two) by Intuitive Machines, using the same type of lander as *Odysseus*; another mission by Astrobotic, using a larger lander called *Griffin*, carrying a NASA-built robotic rover called VIPER; and a lander called *Blue Ghost*, built by Firefly Aerospace, yet another American company which, like Intuitive Machines and Astrobotic, has no track record in the landing game. Ispace, the Japanese firm behind last year's failed HAKUTO-R mission, also hopes to have another try this year. And those are just the private missions slated for 2024; China's space agency also intends to launch *Chang'e 6*, the latest in its successful series of Moon landers, in the next few months.

Shoot for the Moon

Lunar missions, attempted soft landings

Sources: Lunar Resources Registry; Lunar and Planetary Institute *At January 19th

But for now the immediate question is whether *Odysseus* can succeed where all previous private landers have failed. The companies involved in this private Moon race insist that it does not really matter which of them comes first—their shared aim is to provide regular service to the Moon's surface, for both public and private entities. "We are all standing on the shoulders of those that attempted, failed and succeeded," says Steve Altemus, the boss of Intuitive Machines, whose fingers are no doubt firmly crossed. The return to the Moon is proving difficult. But the direction of travel is clear. ■

Tea science

Microbe brewing

A cup's flavour depends on the bacteria living near the plant's roots

FOR THE perfect cup of tea, does one add milk to boiling water, or the reverse? Neither, if new research in the journal *Current Biology* is to be believed. What must be prepared first, instead, are the microbes.

Scientists are increasingly aware that the fungi and bacteria living around a plant's roots can significantly affect its growth. Previous studies on *Arabidopsis*, a species of cress that is the lab rat of the botanical world, have shown that the presence of the right microbes can enhance the absorption of critical nutrients like iron, phosphorus and nitrogen.

The possibility of enhanced nitrogen absorption was particularly intriguing to tea experts Wei Xin and Wenxin Tang at Fujian Agriculture and Forestry University in China because tea plants rely upon nitrogen-rich ammonium in the soil around their roots to produce theanine, an amino acid that generates their distinctive savoury flavours. Collecting the roots and leaves of 17 different tea varietals at different times of year, Dr Xin and Dr Tang found that theanine production varied widely, even among similar teas. Some highly valued oolong teas (the term refers to those whose leaves are partially oxidised after harvesting), such as Rougui, produced a lot of the compound, whereas others, such as Maoxie, produced less.

After growing these two varietals under identical conditions, the researchers collected soil samples and used genetic analysis to identify which microbes were present around the roots. The microbiomes of the two were very different. Crucially, Rougui had more microbes associated with the metabolising of nitrogen than did Maoxie. Consequently, Rougui also showed a greater ability to absorb nitrogen from ammonium in the soil. These differences were particularly stark in the autumn, when the roots were accumulating theanine.

This provoked a natural question. If the microbial community found around Rougui were transplanted to other tea plants, might this increase their theanine production and, in turn, improve their flavour? To explore this, the researchers created a community of microbes made up of 21 bacterial strains that resembled the community found around autumnal Rougui roots and applied them to the roots of Maoxie plants. They report this week that this not only enhanced root growth in Maoxie seedlings by giving them a nitrogen boost, but also nearly tripled the theanine accumulation in the leaves. While the time-consuming process of transforming leaves into drinkable tea has yet to be completed, the researchers have little doubt that there will be big differences.

Flavours aside, the Rougui microbe sample that Dr Xin and Dr Tang worked with has the potential to make a wider environmental impact. Most farmers, not just tea growers, add some form of nitrogen to their soil to enhance growth. While some of this is absorbed by plants, most runs off during heavy rains and ends up polluting natural water bodies. When the researchers applied their microbial cocktail to soil around the roots of *Arabidopsis* plants, they found that, just as with Maoxie, the newcomers enhanced nitrogen uptake. This hints that these microbes have the potential to create new flavours while also reducing agricultural pollution. That should be everyone's cup of tea. ■

Tennis and AI oversight

Injustice is served

Since the introduction of Hawk-Eye, umpires have been biting their tongues

WIMBLEDON'S CENTRE court has seen its share of rivalries; think of McEnroe v Borg, or Williams v Williams. But for David Almog, a behavioural economist at Northwestern University, the match worth tuning in for is umpire v machine.

How AI oversight affects human decision-making is an important question in a world where algorithms play an ever-larger role in everyday life. Car drivers, financial traders and air-traffic controllers already routinely see their decisions overruled by AI systems put in place to rapidly correct poor judgment. Doctors, judges and even soldiers could be next.

Much of this correction happens out of the public eye, thwarting would-be analysts. But, says Mr Almog, "tennis is one of the most visible settings where final decision rights are granted to AI." That is why, together with colleagues in America and Australia, he has looked at whether tennis umpires and line judges correctly called balls in or out during nearly 100,000 points played in some 700 matches across the world, both before and after the introduction of the Hawk-Eye ball-tracking system in 2006.

The Hawk-Eye system, now used at most elite tournaments, uses between six and ten cameras positioned around the court to create a three-dimensional representation of the ball's trajectory. This can then be presented on a screen visible to players, spectators and officials—as well as TV viewers. Players can use it to appeal human decisions, with the AI's verdict considered final. Bad calls from line judges and umpires are now often overturned.

The latest analysis from Mr Almog and his colleagues, published as a preprint last month, showed that Hawk-Eye oversight has prompted human officials to up their game and make 8% less mistakes than before it was introduced. (That comparison can be made thanks to a 2005 trial period in which Hawk-Eye was used without the ability to influence calls.) Such an improvement in performance is to be expected, the researchers say, given the heightened watchfulness that accompanies the threat of public shaming.

Most of the improvement came during the multi-shot rallies that follow a successful serve and return. But when the researchers looked at serves in particular, and especially in cases where the served ball landed within 20mm either side of a line, they were surprised to see the error rate soar. The umpires and line judges, it turned out, had switched strategy. Before Hawk-Eye, they were more likely to call a serve out when it was in. But afterwards, they were even more likely to wave through balls that were actually out. For every 100 mis-hit serves, post-Hawk-Eye umpires left 39 unchallenged. The comparable figure in the earlier era was 26.

Such a shift is easily understood. Overlooked faults are less disruptive in tennis than incorrect cries of "out" because these end the point prematurely. They can also trigger dissent from both the player and crowd when the error is identified on the big screen. It seems that human officials take the less reputationally risky option, even if it leads to more incorrect calls.

Tennis, with its binary outcomes and clear evidence of whether a decision was right or wrong, offers a highly simplified model for AI oversight. But many of the same tendencies will be at play in fields like medicine and law, says Mr Almog, and should be considered before algorithms are allowed to trump human decisions. Most important, perhaps, is the social cost of getting an important call wrong, which will vary between disciplines, and could distort decision-making in different ways. Judges, for example, may prefer to underconvict. Doctors, on the other hand, might over-diagnose. Stay tuned. ■

Fusion power

JET goes out with a bang

A last hurrah from one of fusion's more successful experiments

AFTER 40 YEARS of operation, the Joint European Torus (JET), a fusion experiment at Culham, England, shut up shop in December. But one of its final runs, conducted on October 3rd of last year, served as a fitting swan song.

Fusion reactors are sometimes said to mimic the process that keeps the Sun shining. That is not quite accurate. The raw materials of solar fusion are protons, the nuclei of the lightest and most abundant form of hydrogen. The process that turns them into a helium nucleus (two protons and two neutrons) has several steps. The approach used in JET, a type of reactor called a tokamak, creates helium in a single step by reacting together the nuclei of two heavier types of hydrogen:

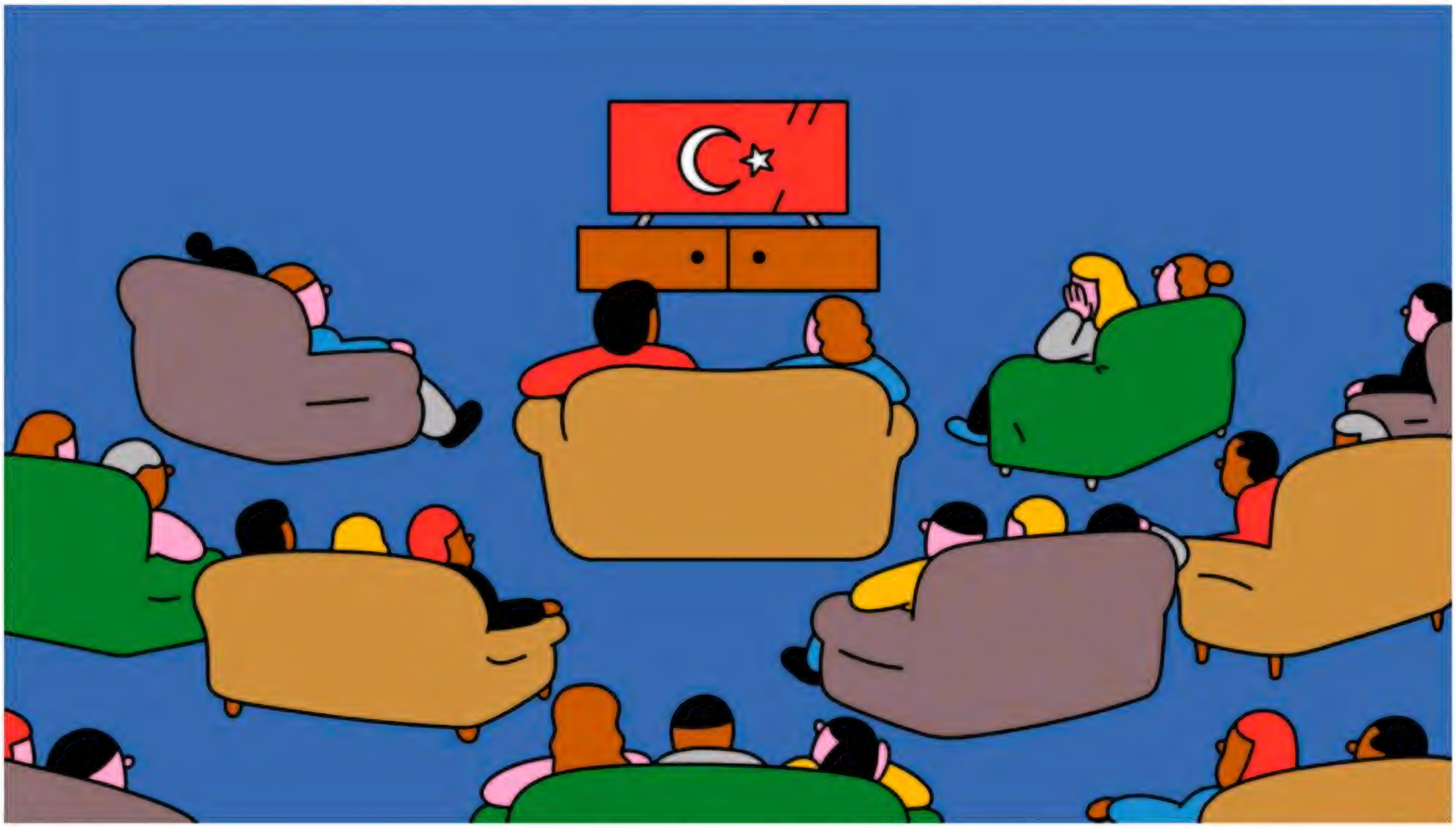
Jammy doughnut

deuterium, with a proton and a neutron, and tritium, with a proton and two neutrons. Both the solar and the terrestrial transmutations release lots of energy, but they have different subatomic by-products—two positrons and two neutrinos in the case of the former, and a neutron in the latter.

JET's reaction vessel was, as per the name, toroidal. Magnetic fields confined and heated the deuterium and tritium within this doughnut-shaped void to create a plasma (a gas-like form of matter in which atomic nuclei and electrons are separate) with a volume of 90 cubic metres. Heated to 150m kelvin, nuclei colliding in such a plasma will fuse.

JET never pretended to be a prototype for commercial-power production. It was there to study the physics of fusable plasmas, not to put out more energy than it consumed. But when its operators cranked the dial up to 11 in October last year, they managed on one occasion to achieve 5.2 seconds of continuous fusion, yielding 69 megajoules of energy, for an average power output of 13 megawatts. Though tiny by the gigawatt standards of modern power stations, that is a record for a tokamak and so a good step in the right direction.

Further records are likely to be broken. A number of firms in both North America and Britain, some using approaches different from tokamaks, have sizeable ambitions for commercial fusion. Britain's government hopes to join in, too, with a tokamak called STEP. All of these enterprises, though, have been helped by JET's results over the decades. Hail and farewell, then, to one of fusion-research's workhorses.



Popular television

Turkish delight

The third-largest exporter of television is not who you might expect

Much of Ottoman history reads like a soap opera. In the 16th century Sultan Suleiman the Magnificent killed anyone whom he suspected of trying to rival him, including two brothers-in-law, two sons and a handful of grandsons. (And you thought your family had problems.) A show about Suleiman, "Muhtesem Yuzyil" ("Magnificent Century"), first aired in 2011 and was part of the first wave of Turkish dramas to go global. Fans of the show include Cardi B, an American rapper.

Today, as popular Turkish shows proliferate, Suleiman has to share the throne with other reigning series. The latest is "Gaddar" ("No Mercy"), about a soldier who returns from war and is forced to become a hitman to protect his family. Turkey is now the third-biggest exporter of scripted series in the world—behind only America and Britain. Between 2020 and 2023 global demand for Turkish shows grew by 184%, compared with 73% for Korean dramas, according to Parrot Analytics, a data firm.

Turkish shows are popular not just in the Middle East but also in Europe and Latin America. Last year the three biggest importers of new Turkish shows were Spain, Saudi Arabia and Egypt. The Istanbul Chamber of Commerce estimates that Turkey's television exports earned $600m in 2022; some analysts predict their sales will soon total billions.

What makes the shows so binge-worthy? For one, they are easy on the eyes. They boast glamorous landscapes, luxurious costumes and handsome actors. Most are love stories; science-fiction series are rarely made, says Ozlem Ozsumbul, head of sales at Madd Entertainment, a distributor. Shows, including legal and period dramas, mix romance and revenge. In 2023 "Yargi" ("Family Secrets"), which follows rival lawyers who fall in love, won an international Emmy award for best telenovela.

Arab audiences appreciate that Turkish shows depict Muslims as heroes, not as terrorists or cab drivers, as Hollywood often does. The shows also bow to expectations of modesty. Turkish media watchdogs blur alcohol bottles, forbid sex scenes and issue fines for characters kissing.

Censorship has forced directors to get creative and can even heighten sexual tension for viewers. Longing looks and lingering fingers replace gratuitous shots of romping. For example, in "Erkenci Kus" ("Early Bird") the love interests almost brush lips as the heroine rubs her perfume on her boss's neck. He later goes to jail for beating a man who tries to buy the rights to the scent.

American romance novelists are taking a page out of the Turkish playbook. Abby Jimenez, who wrote "Yours Truly", a *New York Times* bestselling novel, based her male protagonist on the one from "Sen Cal Kapimi" ("Love is in the Air"), an enemies-to-lovers tale in which a couple falls in love after pretending to be engaged.

In the first half of 2023, the three most popular scripted shows in Spain were Turkish, according to Glance, a TV-data firm. Spaniards and Latin Americans have a history of watching telenovelas, so they are used to the schmaltz and time commitment of Turkish programmes. And some viewers seem to welcome a break from the sex and gore of Western television.

Spanish-speaking audiences are drawn ▸▸

→ Also in this section

to the high production value of Turkish dramas. Latin American telenovelas "look cheap" in comparison, says one purveyor of shows. People in Turkey and Latin America "express feelings unabashedly", says Carolina Acosta-Alzuru of the University of Georgia: "That's why melodrama works in both cultures."

Broadcasters are fans of the shows, too. In Turkey, programmes are aired once a week and can last up to three hours, but when sold to foreign countries they are chopped up and run more often, sometimes daily. TV channels can stretch out the series over hundreds of episodes. Korean dramas are good, says Izzet Pinto, a television distributor, but they last only 13 commercial hours. Turkish ones can extend to around 200.

Some fans complain that they cannot get enough content in their own language. It's a no-brainer to dub shows in Spanish because one version can be distributed throughout Spain and much of Latin America. For languages with fewer speakers, such as Polish or Greek, TV channels resort to cheaper solutions, including subtitles. Some viewers even try to learn a bit of Turkish so they can watch dramas without having to wait for the dubbed versions to come out, says Yasemin Celikkol of Northwestern University in Qatar. Devoted super-fans dub shows for one another on social media.

Dramas have helped boost Turkey's image, especially in former Ottoman lands. Ms Celikkol grew up in Bulgaria hearing that Turks were "evil, barbaric and terrible" but thinks Turkish dramas have helped change that perception. Bulgarians used to holiday in Greece, she says, but now they go to Turkey more often than before.

The state has also got involved. In 2012 Turkey's president, Recep Tayyip Erdogan, slammed "Magnificent Century" for devoting too much time to palace intrigues and not enough to Suleiman's conquests. In response, a Turkish state broadcaster made its own historical drama, "Dirilis: Ertugrul" ("Resurrection: Ertugrul"), about a Turkic warrior in the 13th century. In May 2020, when much of the world's population was in lockdown for covid-19, the show was the fourth-most in-demand TV series globally, according to Parrot Analytics. That year Pakistan's then prime minister, Imran Khan, praised the programme for its "Islamic values", and a statue of Ertugrul was erected in Lahore. An Urdu dubbing of the pilot episode has racked up 153m views on YouTube.

Streaming services are creating more daring programmes. Fans are taken aback by what streamers can get away with. Netflix's "Kulup" ("The Club") follows an ex-convict who reconnects with her daughter after years in prison. The show depicts pogroms against minorities in Istanbul in the 1950s—a politically sensitive topic, to say the least. Streamers' dramas tend to be shorter: so far "Kulup" has 20 episodes compared with 139 for "Magnificent Century". Those who tune in to Amazon's "Bihter", a movie about a woman who cheats on her abusive elderly husband, can even watch sex scenes that brazenly feature bare buttocks.

Relaxing what can appear on screens may improve Turkey's chances of reaching English-speaking audiences, who have been more resistant to dubbed or subtitled series than people in many other countries. Unlike Spain (with "Money Heist") or South Korea ("Squid Game"), Turkey has not had a huge hit in either America or Britain. For example, "Kara Para Ask" ("Black Money Love") was never much loved in America, even though it counts Lionel Messi, an Argentine footballer who plays in Miami, and Barbra Streisand, an American singer, as fans.

But the world is big, and Turkey's shows do not need to conquer Britain and America to be worth watching. Even Sultan Suleiman, who added parts of north Africa and Europe to the Ottoman Empire, did not make it that far. ■

Renaissance art

A room with no view

FLORENCE

Michelangelo's fingerprints are all around—or are they?

STANDING IN THE mausoleum of the Medici Chapel in Florence, among tombs and elegant sculptures designed by Michelangelo, you could be excused for failing to notice the doorway to the left. It leads to a cloakroom, where a trap door opens to a flight of narrow steps. At the bottom is a small vaulted room. The eggshell-white walls are covered with graceful nude figures, a falling Phaethon (son of the sun god), a looming horse's head and several shapely legs drawn in shadowy charcoal—sketches, the museum claims, by the great Renaissance artist himself.

This *stanza segreta* (secret room) had long been closed. Only scholars and bigwigs like King Charles III and Leonardo DiCaprio were allowed entry by the National Museum of the Bargello, of which the chapel is a part. But in November the basement room was opened for a trial period of four months to 100 pre-booked visitors a week; they are allowed in for 15 minutes in groups of four. Tickets sold out. Officials recently extended the experiment until July.

Entering the room, which is bare except for ankle-level strips of LED lighting, is like stepping back in time—not just into the Renaissance, but also into an earlier era of tourism, when attractions lacked explanatory placards and were free from madding crowds. Most of all, it feels like entering someone's head, or their notebook, filled with drafts and doodles, some finely wrought, some cartoonish. You can imagine the middle-aged master in here, perhaps drawing by night. In several places, the walls appear to be scorched with black soot from a burning torch. Near a rendering of a muscular figure, there is even a smudged handprint.

Legend has it that Michelangelo holed up in this *stanza segreta* for a few months in 1530. Following a popular uprising three years before, the artist sided with those who preferred a republic to rule by the Medicis, Italy's wealthiest family, even though he had designed the mausoleum that bears their name. When the Medicis returned, the artist was in danger. This small room, conveniently furnished with a well, might have seemed like a safe haven.

The drawings were rediscovered in 1975 by the Medici Chapel's then director, who suspected that what was then a coal-storage room might be hiding something. Paola D'Agostino, director of the Bargello until mid-January, felt it was important to finally make the room accessible to the public. It shows "Michelangelo's human aspect", she says, though she admits that it is impossible to attribute the drawings securely to the master and concedes that some of the doodles are probably not his work.

Other experts doubt it was Michelangelo's hand who drew them. Antonio Forcellino, who has written two biographies of the artist, believes that none of the drawings is of high enough quality to merit firm attribution. William Wallace, a professor at Washington University in St Louis and a leading expert on Michelangelo, thinks ▸▸

What lies beneath

that only a couple may be by the artist—a head that resembles the famous Laocoon statue Michelangelo had seen in Rome, as well as a standing male figure gracing a whole wall near the stairs—and that most were made by some of the 50 or so workmen employed to build the chapel above.

As for Michelangelo hiding in the room? "That's totally bogus," according to Mr Wallace. The already-famous artist is more likely to have been protected by a friend. Yet Mr Wallace argues that the room is a landmark finding nonetheless, because Michelangelo's workmen "are in some ways equal in importance to Michelangelo" himself. Greatness does not exist in isolation.

Just as the little guys are often overshadowed by the old masters they worked for, drawing often loses out to flashier forms like painting and sculpture. But the humble medium communicates the presence of hands, and minds, in motion.

Looking at these walls, you feel as if the artists who adorned them nearly five centuries ago—perhaps hiding from the summer heat, or taking a drink from the well—have just left. Even if this is not the work of Michelangelo, it evokes his world. ■

Israeli comedy

Laughing to tears

"A Wonderful Country" is an attempt at national healing—and influence abroad

THE COMEDY sketch opens at "Columbia Untisemity News, where everyone is welcome—LGBTQH," says a university student with pink hair and face piercings (pictured, right). She explains that the "H" stands for "Hamas". Another student, who wears a chequered *keffiyeh* scarf and studies "queer post-colonial astrology", chimes in enthusiastically. "Yeah, I totally simp Hamas, it's so trending right now." They decide to video chat with a Hamas militant, expressing concern for his well-being while he berates them: "We will throw you from the roof, you homosexual dirt." The students are delighted. "Did you hear? They want to throw me a rooftop party!"

The satire recently aired on Israel's irreverent television show, "Eretz Nehederet" ("A Wonderful Country"). Though sometimes compared to America's "Saturday Night Live", the humour in "A Wonderful Country" is more biting. "Life in Israel is much more extreme," Muli Segev, the producer, says. "It's actually life or death. The satire must be sharp, even brutal."

Now in its 21st season—it had its premiere in 2003—"A Wonderful Country" is

The Ivy League, according to Israelis

one of the most influential shows in Israel, watched by around 30% of Israelis who own television sets. The sketches often skewer Israeli politicians and public figures. But since the outbreak of war the show has also looked outward, lampooning a supposed pro-Palestinian bias among liberals in the West.

One recent sketch lambasts the BBC's coverage of the war. Announcing Israel's bombing of a hospital in Gaza, a news anchor urges her producer to increase the number of casualties displayed on screen ("More, more!"). She turns to correspondent "Harry Whiteguilt", who says he is reporting from the "illegal colony of Tel Aviv" and describes Hamas as "the most credible not-terrorist organisation in the world", a swipe at the BBC's reluctance to refer to Hamas as "terrorists". It turns out Hamas is to blame for the hospital strike. "But it's still Israel's fault," Mr Whiteguilt insists.

The show posts sketches in both Hebrew and English on its social-media platforms, where they can reach viewers outside Israel. Lately, the English-language sketches have gone viral. The clips reflect "how a lot of Israelis feel" and are "a way for them to explain their side" to a global audience, says Shayna Weiss, senior associate director of the Schusterman Centre for Israel Studies at Brandeis University.

The comedy show is especially popular among American Jews. A few Jewish-American celebrities, including Brett Gelman, an actor on the show "Stranger Things", have made guest appearances. According to Ms Weiss, "This war is obviously not being fought just on the battlefield. It's also being fought on social media." But the show has a blind spot. Mocking college students is easy; acknowledging the suffering of Palestinians is proving rather harder. "A Wonderful Country" has not touched on the death and destruction Israel has caused in Gaza, which is no laughing matter.

After October 7th, the day 1,200 people in Israel were tortured and murdered by Hamas militants, the show temporarily changed its name to "Eretz Nilhemet" ("A Fighting Country"). But despite the nationalist bent, the Hebrew sketches often lampoon Binyamin Netanyahu, the prime minister, and the Israeli government. (They are far more critical of Israeli leadership than those aired in English.)

One sketch urged female soldiers in the Israel Defence Force to wear fake moustaches to be taken seriously—playing with the idea that a refusal to heed warnings from some of them contributed to Israel's intelligence oversights. In another sketch Mr Netanyahu is visited by the ghost of Golda Meir, a former Israeli prime minister, who thanks him for making her look better. "Finally, after 50 years, my failures aren't the biggest in history," she says, puffing a cigarette. (Meir's government was blamed for not being prepared for the Yom Kippur war in 1973.) "Most of us don't like the government at all," explains Mr Segev. But still, everyone on the show believes Hamas has to be defeated to keep Israelis safe: "We're on Israel's side." ■

The Wa

Big drug-dealers, small profile

Narcotopia. By Patrick Winn. *PublicAffairs; 384 pages; $32 and £20*

MANY DRUG cartels share similar starts. Hard-up farmers in remote villages grow illicit cash crops (coca plants and opium poppies can be cultivated even in poor soil). Local criminals muscle in. Trafficking syndicates spring up to ship the processed narcotics to the rich world. As profits rise, the cartel has to fight off competition. It bribes and threatens officials to ignore its activities.

The pattern has been repeated from Afghanistan to Mexico, but only one place has become a fully fledged narco-state. Wa State, a mountainous region within Myanmar, near China, is home to the Wa, an ethnic group comprising around 1m people. It spans roughly the same amount of land as the Netherlands. It declared de facto independence from Myanmar in 1989; today it is governed by the United Wa State Army (UWSA) under one-party socialist rule. (It is not recognised internationally.)

Since the late 1980s the UWSA has dominated the business of peddling methamphetamine in South-East Asia. (The UN

estimates that trade of the drug in East and South-East Asia is worth $80bn a year.) It started out cultivating opium, graduated to making heroin and now cooks some of the world's best meth. This pays for an army larger than Sweden's, which is well stocked with high-tech weaponry.

"Just as Haiti was built on sugar and Saudi Arabia on oil, Wa State was built on heroin and methamphetamine," Patrick Winn writes in "Narcotopia". Yet the "UWSA isn't some jungle-dwelling mafia. It's running an honest-to-God nation." The rogue ethnostate collects taxes. It has its own hospitals, schools and electricity grid, and its roads are better paved than many in Myanmar. Members of the Politburo are chummy with the Chinese government, and the Wa maintain an informal embassy in Myanmar. Wa citizens sing their own anthem and live under their own flag.

Mr Winn, a correspondent for "The World", a show on America's National Public Radio, has covered Asia's fluid borders for years. His previous book, "Hello, Shadowlands" (2018), peeked at the UWSA as part of a broader look at rebel fiefs. "Narcotopia" is a more detailed examination. Though Mr Winn's attempts to smuggle himself into Wa State were thwarted by the pandemic, he manages to interview leaders including Saw Lu, an anti-drug evangelical who became the UWSA's first foreign minister. The elderly official recounts how he tried and failed to wean his government off narco-dollars.

America bears much of the blame, Mr Winn argues. Dredging up little-known research, he sets out how the CIA sponsored various opium-smugglers in Myanmar in the 1950s-70s. In exchange for guns and legal immunity, these warlords doubled as anti-communist militia bosses, gathering intelligence and launching raids into Maoist China. The CIA thwarted attempts to arrest top capos and even lent them spy planes to move dope. The agency would repeat these deals with Nicaraguan rebels in the 1980s, igniting the Iran-Contra scandal.

In portraying Washington's grimy role in the Wa saga, Mr Winn sometimes skims over the actions of others. China acts as the UWSA's protector, giving it arms in exchange for not smuggling drugs into the country. Myanmar's generals have granted Wa State carte blanche so long as it does not seek recognition from the UN.

Even so, the book offers a rich analysis of narco-states. The UWSA produces bright pink, sweet-smelling meth pills that are triumphs of branding: the "WY" logo is "as recognisable...as Nike's swoosh", Mr Winn claims. Asia's partying youngsters and exhausted workers consume billions every year. Wa State is not so much a den of vice, the author argues, as a nest of realpolitik and innovation. ■

The history of disease

Pen v pandemic

The Wisdom of Plagues. By Donald McNeill. *Simon & Schuster; 384 pages; $28.99 and £20*

EARLY ONE morning a *New York Times* reporter was shaken roughly awake. He was sleeping in a tiny hut, deep in the Cameroonian rainforest. Some local criminals were coming to kidnap him, his guide warned. Both men fled, just in time.

The reporter was Donald McNeill, who started at the *New York Times* as a copy boy in 1976 and later spent decades covering global health, especially the diseases that afflict the poor. He did so with courage, compassion and an eye for unexpectedly important details. The story he was pursuing in Cameroon was about hunting great apes and how their extinction might harm understanding of diseases that have crossed from other primates to humans. As a scientist told him, killing chimpanzees "is like burning a library full of books you haven't read yet".

Mr McNeill's reportorial adventures prepared him for the biggest story of his career: he and colleagues won a Pulitzer prize for their coverage of covid-19. *Times* readers no longer have the benefit of his insights, however. He was pushed out in 2021 because of complaints that he had uttered a racial slur when referring to a conversation about someone else using it. On the plus side, Mr McNeill then had time to write a cracking book on pandemics.

"The Wisdom of Plagues" puts the struggle against pestilence in historical context, noting how the shift from hunter-gathering to farming made it easier for bugs to jump from livestock to people. Mr McNeill explains how plagues have shaped history, from the typhus that crippled Napoleon's invasion of Russia to the covid-induced isolation that, he speculates, might have aggravated Vladimir Putin's paranoia.

Fear of disease has long led to scapegoating. Syphilis was "the French pox" to the English, "the Turkish disease" to Poles and "the Christian disease" to Turks. Mr McNeill recounts how a chest of gold and silver coins was recently found in the old Jewish quarter of Erfurt, Germany. The last king depicted on the coins had ruled in 1349, the year the Black Death struck the city. Locals blamed the Jews, as they did all over western Europe. The owner of the chest never got to dig it up.

With fear comes falsehood. If it is not ethnic minorities supposedly spreading plagues, it is evil tycoons profiting from them in convoluted ways. A century before Bill Gates was accused of using covid jabs to plant chips in people, John D. Rockefeller funded a campaign to urge Americans to wear shoes to stop hookworm burrowing into their bare feet. Rumours spread that "the oil magnate had secretly bought up shoe companies".

Misinformation is a huge obstacle to fighting disease. Mr McNeill saw close-up some of the estimated 300,000 extra deaths caused by a South African president, Thabo Mbeki, who concluded after surfing the internet that HIV did not cause AIDS. He watched the global campaign to eradicate polio stumble because so many Muslims believe the vaccine is a Western plot to sterilise them. Convincing them otherwise grew harder, Mr McNeill fumes, when the CIA used a fake vaccination campaign to try to trace Osama bin Laden in 2011. In one month the next year, Pakistani jihadists shot dead nine polio vaccinators. ▸▸

Suited up for battle

To fight pandemics, accurate information must be rapidly disseminated. That means bureaucracies need to move faster. "I can't think of a single serious outbreak I learned of first" from the World Health Organisation (WHO), complains Mr McNeill. It is part of the UN, and like "a London gentleman's club", defers to its members. PROMED, an unofficial disease-alert network, sounded the alarm about covid-19 four days before the much better-resourced WHO.

Accurate information must also be believed. Too often, it is not, because of a breakdown of public trust in authorities. When experts make mistakes, which is inevitable when grappling with a new disease, many people conclude that the professionals are useless or self-serving.

In this, they are encouraged by reckless pundits and politicians. "The storm of rumours surrounding covid was by far the most intense I ever covered—for an obvious reason: many of them were spread by the president of the United States," Mr McNeill writes. He deplores the way masks became political badges in America, with Republicans shunning them and Democrats sporting them even when cycling outdoors without helmets. Tribalism makes for poor risk assessment.

Mr McNeill brims with ideas for curbing the next pandemic, including sampling sewage for viruses. He would, controversially, end religious exemptions to public-health rules. He omits some important things, such as the mystery of why Sweden coped reasonably well with covid despite very loose lockdown rules. But overall, this is a fascinating, ferocious fusillade against humanity's two deadliest enemies: disease and itself. ■

Back Story Carlson in the Kremlin

The real message of a much-hyped interview with Russia's president

IT CANNOT HAVE taken long for Tucker Carlson to grasp that his interview with Vladimir Putin might not go to plan. His first question was about the threat posed to Russia by NATO and America; President Putin's response was a disquisition on Rurik, a Varangian chieftain of the ninth century, and the medieval reign of Yaroslav the Wise. To some on America's right, he is an enviably ruthless pragmatist, a warrior-prince of white Christian nationalism. He came across as one of those cranks who fixate on an arcane bit of history, except that his obsession—Russia's historical claim to Ukraine—is backed by a nuclear arsenal.

The interview, taped in the Kremlin on February 6th and released online two days later, was the first Mr Putin has given to a Westerner since the invasion of 2022. It came at a pivotal moment in more than one way. A shortage of kit and munitions is hobbling Ukraine's resistance. In America congressional Republicans have held up further support for Kyiv, mindful of the presidential election this November and Donald Trump's candidacy in it.

A Trumpist provocateur and former host on Fox News, Mr Carlson gave Mr Putin lots of chances to stir up American politics. For a supposed sorcerer of electoral meddling, the president did a poor job. Might a new administration in Washington help mend relations with Russia? "It is not about the leader," he said disobligingly. Invited, more than once, to blame NATO for the war—a bogus explanation favoured by American isolationists—he repeatedly blathered about history. Mr Carlson looked, now and then, like a man who has drifted into a reverie over whether he left the oven on.

The president told flagrant lies. He said he launched the invasion of 2022 to stop a war that Ukraine had started in 2014 after a CIA-backed coup. Russian forces withdrew from Kyiv as a gesture of goodwill, he fibbed. He alleged, as usual, that the Ukrainian government and its Jewish president promote Nazi ideology.

Mr Carlson, who mixed up Ukraine's revolution of 2014 with an earlier one, was unwilling or unable to challenge such falsehoods. Nor did he raise Russian war crimes, including those of which Mr Putin personally stands accused, or the repression of domestic critics such as Alexei Navalny. (He did press for the release of Evan Gershkovich, an American journalist imprisoned in Russia.) Still, Mr Carlson came away with more than the file of letters by a 17th-century Cossack which, bizarrely, Mr Putin presented to him.

For Mr Putin made several remarks which, out of their rambling context, will hearten those who say aiding Ukraine is not in America's interests. In the past he hinted, darkly, that Russia might use nukes, yet he told Mr Carlson this idea was just a way for Western politicians to extort more tax. He denied any interest in invading Poland or Latvia (though he once said the same about Ukraine). Asked about the hypothetical deployment of American troops to the conflict, he gave an answer that may be clipped and replayed. "Don't you have anything better to do?" Mr Putin scoffed, mentioning America's border and national debt.

After this docile questioning Mr Carlson was disparaged in the West as a "useful idiot". He may feel the boost to his profile—and his new streaming website—is worth the disdain. Russian state media, meanwhile, trumpeted Mr Putin's performance. Watched closely, though, their exchange offered insights of a kind that neither may have intended.

One is about the risks of rulers staying in power for decades. As his comments revealed, even now Mr Putin resents the West's role in the wars in Yugoslavia of the 1990s and other long-ago crises. In democracies, transitions of power are an amnesiac balm for such grievances, allowing relations with other countries to heal and move on. In office for almost a quarter of a century, Mr Putin is still avenging old grudges.

Another lesson lay in his sneering hauteur. He faced a hand-picked interviewer who lobbed softball questions. Even so, Mr Putin's answers showed no regard for the patience or interests of viewers. But why would they? He is not accustomed to explaining himself. He does not rule through persuasion or charm but by violence and fear.

Power in Russia is opaque. It often seems that only one man is in the know, and even he seems frequently to be flailing. Mr Carlson was granted rare access to him and fluffed it. All the same, a vital message was broadcast clearly: Mr Putin is not a leader to be trusted, much less to emulate or admire.

Economic & financial indicators

Economic data

	Gross domestic product, % change on year ago, latest	quarter*	2023†	Consumer prices, % change on year ago, latest	2023†	Unemployment rate, %	Current-account balance, % of GDP, 2023†	Budget balance, % of GDP, 2023†	Interest rates, 10-yr gov't bonds, latest,%	change on year ago, bp	Currency units, per $, Feb 14th	% change on year ago
United States	3.1 Q4	3.3	2.5	3.1 Jan	4.1	3.7 Jan	-3.0	-6.3	4.3	59.0	-	
China	5.2 Q4	4.1	5.2	-0.8 Jan	0.3	5.1 Dec‡§	1.7	-3.8	2.4 §§	-37.0	7.19	-5.2
Japan	1.5 Q3	-2.9	1.8	2.6 Dec	3.3	2.4 Dec	3.9	-5.0	0.7	22.0	151	-11.8
Britain	0.3 Q3	-0.5	0.2	4.0 Jan	6.8	3.8 Nov††	-2.9	-3.9	4.1	62.0	0.80	2.5
Canada	0.5 Q3	-1.1	1.1	3.4 Dec	3.9	5.7 Jan	-0.4	-1.3	3.6	54.0	1.36	-1.5
Euro area	0.1 Q4	0.2	0.6	2.8 Jan	5.4	6.4 Dec	2.4	-3.3	2.4	4.0	0.93	nil
Austria	-1.8 Q3	-2.1‡	-0.7	4.3 Jan	7.7	5.6 Dec	1.6	-2.2	2.9	-5.0	0.93	nil
Belgium	1.5 Q4	1.6	1.3	1.5 Jan	2.3	5.7 Dec	-1.1	-4.3	2.9	-6.0	0.93	nil
France	0.7 Q4	-0.1	0.9	3.4 Jan	5.7	7.3 Dec	-1.1	-4.9	2.9	3.0	0.93	nil
Germany	-0.2 Q4	-1.1	-0.2	3.1 Jan	6.0	3.1 Dec	5.6	-2.2	2.4	4.0	0.93	nil
Greece	1.8 Q3	0.1	2.2	3.7 Dec	4.2	9.2 Dec	-5.7	-2.1	3.4	-81.0	0.93	nil
Italy	0.5 Q4	0.7	0.7	0.9 Jan	5.9	7.2 Dec	0.5	-5.4	4.0	-21.0	0.93	nil
Netherlands	-0.5 Q4	1.3	0.1	3.1 Jan	4.1	3.6 Dec	9.4	-2.1	2.7	4.0	0.93	nil
Spain	2.0 Q4	2.5	2.3	3.5 Jan	3.4	11.7 Dec	2.0	-4.0	3.3	4.0	0.93	nil
Czech Republic	-1.0 Q3	0.8	-0.5	6.9 Dec	10.7	2.7 Dec‡	-1.3	-3.9	3.7	-89.0	23.7	-6.8
Denmark	-0.5 Q3	-2.6	0.9	1.2 Jan	3.3	2.9 Dec	10.5	2.2	2.5	-3.0	6.95	nil
Norway	0.5 Q4	6.2	0.4	4.7 Jan	5.4	3.7 Nov‡‡	17.2	10.6	3.7	59.0	10.6	-4.2
Poland	1.0 Q4	nil	0.5	6.2 Dec	11.4	5.4 Jan§	1.7	-4.7	5.5	-69.0	4.05	10.1
Russia	5.5 Q3	na	3.0	7.4 Jan	5.9	3.0 Dec§	2.5	-1.9	12.0	123	91.7	-19.7
Sweden	-0.5 Q4	0.4	-0.3	4.4 Dec	6.0	7.7 Dec§	5.4	-0.3	2.5	2.0	10.5	-1.6
Switzerland	0.3 Q3	1.1	0.8	1.3 Jan	2.1	2.2 Jan	10.9	-0.7	0.9	-49.0	0.89	3.4
Turkey	5.9 Q3	1.1	4.5	64.9 Jan	53.9	8.9 Dec§	-4.4	-5.0	23.8	1,269	30.8	-38.8
Australia	2.1 Q3	0.9	1.9	4.1 Q4	5.6	3.9 Dec	0.5	0.7	4.1	51.0	1.54	-7.1
Hong Kong	4.3 Q4	2.0	3.4	2.4 Dec	2.1	2.9 Dec‡‡	7.2	-1.7	3.8	26.0	7.82	0.4
India	7.6 Q3	8.6	6.9	5.1 Jan	5.7	6.8 Jan	-0.5	-5.9	7.1	-26.0	83.0	-0.3
Indonesia	5.0 Q4	na	5.0	2.6 Jan	3.7	5.3 Q3§	0.4	-2.5	6.6	-7.0	15,594	-2.8
Malaysia	3.4 Q4	na	3.8	1.5 Dec	2.5	3.3 Dec§	1.5	-5.1	3.9	-3.0	4.79	-9.2
Pakistan	nil 2023**	na	nil	28.3 Jan	30.8	6.3 2021	0.2	-8.0	14.5 †††	-27.0	279	-4.2
Philippines	5.6 Q4	8.7	5.4	2.8 Jan	6.0	4.2 Q4§	-4.1	-7.1	6.3	-6.0	56.1	-2.3
Singapore	2.8 Q4	7.0	1.2	3.7 Dec	4.8	2.0 Q4	18.7	-0.7	3.1	-4.0	1.35	-1.5
South Korea	2.2 Q4	2.5	1.3	2.8 Jan	3.6	3.3 Dec§	2.1	-2.7	3.5	11.0	1,335	-4.9
Taiwan	5.1 Q4	8.8	1.4	1.8 Jan	2.5	3.4 Dec	12.9	-0.1	1.2	3.0	31.4	-3.6
Thailand	1.5 Q3	3.1	2.5	-1.1 Jan	1.2	0.8 Dec§	0.8	-2.7	2.8	10.0	36.1	-6.5
Argentina	-0.8 Q3	11.3	-1.0	254 Jan	133.5	5.7 Q3§	-3.5	-6.0	na	na	834	-77.0
Brazil	2.0 Q3	0.6	2.9	4.5 Jan	4.6	7.4 Dec§‡‡	-1.2	-7.5	10.7	-275	4.97	3.8
Chile	0.6 Q3	1.3	nil	3.2 Jan	7.6	8.5 Dec‡‡	-3.4	-2.4	5.5	-21.0	958	-17.7
Colombia	-0.3 Q3	1.0	1.1	8.3 Jan	11.7	10.0 Dec§	-3.4	-4.2	9.7	-251	3,915	22.8
Mexico	2.4 Q4	0.4	3.4	4.9 Jan	5.5	2.8 Dec	-1.5	-3.9	9.3	46.0	17.1	8.7
Peru	-1.0 Q3	-1.1	-0.5	3.0 Jan	6.3	5.8 Dec§	-1.0	-2.7	6.7	-116	3.87	-0.3
Egypt	2.7 Q3	na	3.8	29.8 Jan	33.9	7.1 Q3§	-1.5	-6.2	na	na	30.9	-1.0
Israel	3.4 Q3	2.7	1.5	3.0 Dec	4.2	3.1 Dec	5.8	-4.1	4.2	82.0	3.66	-3.8
Saudi Arabia	3.8 2023	na	-0.9	1.5 Dec	2.3	5.1 Q3	2.7	-2.1	na	na	3.75	nil
South Africa	-0.7 Q3	-1.0	0.6	5.2 Dec	6.1	31.9 Q3§	-2.0	-5.2	10.1	26.0	19.1	-6.0

Source: Haver Analytics. *% change on previous quarter, annual rate. †The Economist Intelligence Unit estimate/forecast. §Not seasonally adjusted. ‡New series. **Year ending June. ††Latest 3 months. ‡‡3-month moving average. §§5-year yield. †††Dollar-denominated bonds. Note: Euro area consumer prices are harmonised.

Markets

In local currency	Index Feb 14th	% change on: one week	Dec 30th 2022
United States S&P 500	5,000.6	0.1	30.2
United States NAScomp	15,859.2	0.7	51.5
China Shanghai Comp	2,865.9	1.3	-7.2
China Shenzhen Comp	1,577.3	3.2	-20.2
Japan Nikkei 225	37,703.3	4.4	44.5
Japan Topix	2,584.6	1.4	36.6
Britain FTSE 100	7,568.4	-0.8	1.6
Canada S&P TSX	20,889.4	-0.4	7.8
Euro area EURO STOXX 50	4,709.2	0.6	24.1
France CAC 40	7,677.4	0.9	18.6
Germany DAX*	16,945.5	0.1	21.7
Italy FTSE/MIB	31,329.4	1.1	32.2
Netherlands AEX	843.7	1.6	22.4
Spain IBEX 35	9,916.6	0.3	20.5
Poland WIG	79,421.2	-0.1	38.2
Russia RTS, $ terms	1,122.5	-0.2	15.7
Switzerland SMI	11,213.6	nil	4.5
Turkey BIST	9,072.1	2.6	64.7
Australia All Ord.	7,790.5	-0.8	7.9
Hong Kong Hang Seng	15,879.4	-1.3	-19.7
India BSE	71,822.8	-0.5	18.1
Indonesia IDX	7,209.7	-0.4	5.2
Malaysia KLSE	1,529.3	1.1	2.3

	index Feb 14th	% change on: one week	Dec 30th 2022
Pakistan KSE	62,153.8	-3.1	53.8
Singapore STI	3,139.1	-0.5	-3.5
South Korea KOSPI	2,620.4	0.4	17.2
Taiwan TWI	18,096.1	nil	28.0
Thailand SET	1,385.1	-1.1	-17.0
Argentina MERV	1,105,579.7	-4.1	447.1
Brazil BVSP*	127,018.3	-2.3	15.8
Mexico IPC	57,248.5	-2.5	18.1
Egypt EGX 30	28,875.0	3.5	97.8
Israel TA-125	1,886.5	0.5	4.7
Saudi Arabia Tadawul	12,438.8	2.2	17.9
South Africa JSE AS	73,009.8	-1.8	-0.1
World, dev'd MSCI	3,265.7	nil	25.5
Emerging markets MSCI	998.9	-0.4	4.4

US corporate bonds, spread over Treasuries

Basis points	latest	Dec 30th 2022
Investment grade	110	154
High-yield	367	502

Sources: Refinitiv Datastream; Standard & Poor's Global Fixed Income Research. *Total return index.

Commodities

The Economist commodity-price index 2020=100	Feb 6th	Feb 13th*	% change on month	year
Dollar Index				
All Items	127.5	127.7	1.4	-6.4
Food	132.3	133.4	3.4	-9.2
Industrials				
All	122.8	122.9	-0.2	-3.9
Non-food agriculturals	127.0	132.1	3.0	-0.8
Metals	121.7	120.6	-1.1	-4.7
Sterling Index				
All items	130.3	130.2	1.9	-9.7
Euro Index				
All items	135.6	136.1	2.9	-6.4
Gold				
$ per oz	2,036.7	1,994.8	-2.0	7.8
Brent				
$ per barrel	78.7	83.0	5.9	-3.2

Sources: Bloomberg; CME Group; Cotlook; Refinitiv Datastream; Fastmarkets; FT; ICCO; ICO; ISO; Live Rice Index; LME; NZ Wool Services; Thompson Lloyd & Ewart; Urner Barry; WSJ. *Provisional.

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A line through the jungle

Jack Jennings, probably the last surviving Allied POW who built the Burma Railway, died on January 19th, aged 104

EVEN AS A young man, Jack Jennings was something of an expert on wood. He knew his oak from his ash, and his elm from his beech. Since leaving school at 14 he had worked with wood, first on the four-cutter moulding machine and then by hand as a joiner. Over five years of classes at Dudley Art College, in the Midlands, he made a work shed and workbench, a succession of stools and a complete bedroom suite, all French polished, in oak. He had just finished the wardrobe when in 1939, aged 20, he was called up.

He also knew his tools: the different saws, hammers, chisels and blades, and the long-handled adze which smoothed rough trunks into planks. What he did not expect was that, with hand-held implements like these, he would have to build a railway.

The railway in question was to run from Ban Pong in Thailand to Thanbyuzayat in Burma (now Myanmar), for roughly 250 miles. Much of its route lay through dense, sticky jungle. It was a project of the occupying Japanese army, which used as slave labour around 200,000 Asian civilians and 60,000 Allied prisoners-of-war. Mr Jennings found himself in that category in February 1942, after his battalion in the 1st Cambridgeshire regiment was forced to surrender to the Japanese during the fall of Singapore. With that defeat, he began a forced trail from railway camp to railway camp that lasted for three and a half years.

To build the embankments he and the others were given shovels, small picks and wicker baskets for the earth. To make sure the bank was firm he would have to tread it in, up and down, for hours. As the days passed, the earth-loads had to be carried ever farther and higher. In the scalding heat, sweat poured off him; he worked near-naked, and on his tired, bony body mosquitoes feasted.

Most of the time, though, he worked as a carpenter. The railway, save the narrow-gauge track, was built almost entirely of hardwoods and bamboo. Trees had to be felled, debarked, cut into baulks and stacked by the line, or tapered with an axe to make piles. Some had to be bodily lifted by teams of men and cantilevered into place as bridges over dips and streams. Hardwoods, he soon found, were as tough as they sounded, and felling them could disturb a swarm of big red ants that bit like hell. Bamboo, used also for fuel, sent splinters into flesh that could infect it. He protected his feet by making wooden shoes fitted with a cross-strap, but a bamboo shaft still caught his left leg and caused an ulcer as big as a pear.

Illness and accidents were legion. In all, the railway cost the lives of perhaps 90,000 Asian civilians and 16,000 prisoners-of-war. He himself got malaria, dysentery and renal colic that put him in a hospital camp for nine months. Of course, he was weak to start with: sleeping, as they all were, on filthy bamboo slats in muddy shelters, subsisting on rice, vegetable water and a teaspoon of sugar, and working 11-hour shifts. But at least he didn't get the cholera which at one point was claiming 15 victims a day. And at least he didn't fall into the depression that made a friend die one night from, as it seemed to him, simply giving up.

Giving up didn't run in his family. He had grown up poor, with nine people sharing three bedrooms in a barely heated house. As a child he would scrounge coal from the railway line that ran nearby, gathering whatever fell from the steam trains. His father had died when he was eight; he therefore had to leave school early, while his mother took in washing. His joinery he learned at evening classes after work, rather wearily, struggling to transport the lengths of timber on his bike. But he was proud of what he made.

His attitude, in fact, was almost chirpy. As chirpy as the harmonica he had played since he was six, even joining a band in his teens to give concerts in smart grey flannel trousers and a blue-and-white striped tie. In his first wartime billets in England he would play at the drop of a hat; so much so, that on the long voyage to Singapore he found that his harmonica had no voice left, and threw it overboard. He felt sorry, in the railway years, that he had done that. But he put away thoughts of home in England, even of his fiancée Mary waiting patiently in Staffordshire, and pretended instead that home was where he was, croaking bullfrogs, gruel and all. He would put up with it and get on with it. Oddly enough, things seemed better then.

His various illnesses also had a positive side. They allowed him spells of rest to get over them, and carpentry duties, in any case, were less strenuous than bank-building. He was lucky that way. In the spare time he could find he carved a chess set and made an octagonal table to play on, which got good use. The pieces began as off-cuts from bed boards, half of them carefully blackened with permanganate of potash. To bring back something beautiful from his prison was deeply satisfying.

What he could not improve or change was the behaviour of the Japanese guards. Prisoners who broke the rules might be clapped in bamboo cages. Those who tried to escape were beheaded. If his pace of work slackened, he got jabbed with a rifle butt. "*Dame! Dame!*" was the usual shout from the guards: "Useless, no good!" Once, when he saluted a Japanese guard (as was required), he got slapped in the face for it. He could not guess why. His happy-go-lucky attitude never applied as far as his captors were concerned.

When the war at last ended, he quickly resumed the life he had intended to have in 1939. He married Mary, had two daughters, went back to joinery and bought a new harmonica, which he played into his 100s, leading singalongs at his favourite local café in Devon. "Onward Christian Soldiers" was a favourite party piece, and "Name that Tune" another.

As for the Burma Railway, he buried it deep. Only in the 1990s did he start to write and talk about it. Four times after that he went back to Thailand, and was surprised to find how cared-for and lovely the camp sites and graveyards were. Even the sight of the railway he had built, though almost all of it had gone, raised a smile from him. The ghosts of the past were laid; he could again be happy wherever he was. ■